Class _____ No. _____

Presented by

Exchange.

Bdg.2.20

LIBRARY OF THE
COLLEGE OF PHYSICIANS
OF PHILADELPHIA

Digitized by the Internet Archive
in 2016

https://archive.org/details/westvirginiamedi2519west

Vol. XXV JANUARY : 1929 No. 1

The West Virginia Medical Journal

JEFFERSON MEDICAL COLLEGE LIBRARY

OFFICIAL PUBLICATION OF THE HOSPITAL ASSOCIATION OF WEST VIRGINIA AND THE CENTRAL TRI-STATE MEDICAL SOCIETY COMPOSED OF WEST VIRGINIA, OHIO AND KENTUCKY

Published by The West Virginia State Medical Association

Table of Contents on Page XXXIV

Remember! when treating stubborn coughs you have available

CALCREOSE offers the full expectorant action of creosote in a form agreeable to the patient.

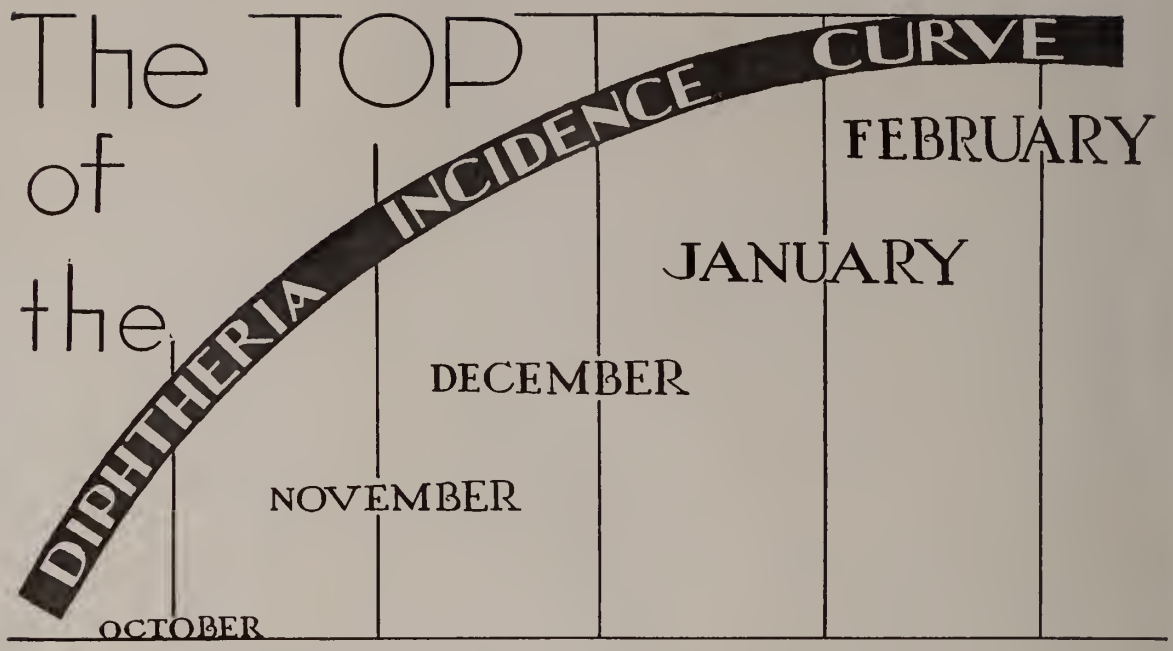
Each 4 gr. tablet contains 2 grs. of creosote combined with calcium hydroxide.

Calcreose

Meeting the demand for a cough syrup containing *Calcreose* is the new COMPOUND SYRUP OF CALCREOSE ... a tasty, effective remedy for minor respiratory affections.

Each fluid ounce represents Calcreose Solution, 160 minims (equivalent to 10 minims of pure creosote); Alcohol, 24 minims; Chloroform, approximately 3 minims; Wild Cherry Bark, 20 grains; Peppermint, Aromatics and Syrup q.s. *Samples of Tablets and Syrup to Physicians on Request.*

MALTBIE CHEMICAL COMPANY
NEWARK, N.J.



Diphtheria, at all seasons of the year a serious disease, is of special importance NOW because of its high seasonal incidence.

Squibb Offers Reliable Protection Against Diphtheria

1. In cases of clinical or suspected diphtheria and for prophylaxis—Squibb's Diphtheria Antitoxin.

   By Squibb's method a superior Antitoxin has been developed, which attains a degree of purity, clarity, fluidity, and freedom from serum-reaction-producing proteins.

2. For determining susceptibility to diphtheria (Schick test)—Squibb's Diphtheria Toxin.

   The Schick Test is still the most reliable clinical test for determining whether a person is susceptible or immune to diphtheria. Also for checking success of immunization by Toxin-Antitoxin.

3. For active immunization against diphtheria—Squibb's Diphtheria Toxin-Antitoxin Mixture prepared with Antitoxin from the sheep.

   The remote chance of sensitizing the patient to horse serum (which may be used at some later date, as in treatment with antitoxin for tetanus, erysipelas, scarlet fever, etc.) has been eliminated by substituting in this mixture, concentrated antitoxin prepared from the sheep for that prepared from the horse.

4. Also for active immunization against diphtheria — Squibb's Diphtheria Toxoid.

   This is prepared chemically without the use of either horse or sheep serum, and effects a high percentage of immunity with but two doses given two to three weeks apart.

Importance of Early Administration of Diphtheria Antitoxin

Every day lost in administering diphtheria antitoxin counts against the patient's chance for life. From a mortality of less than 1% when given on the first day of the disease, there is an increase to 25% on the fifth day. It is an alarming fact that in a large percentage of diphtheria deaths, the patients are moribund before they receive antitoxin.

Write to our Professional Service Department for detailed information regarding these products, their choice, dosage under varying conditions, etc.

E·R·SQUIBB & SONS, NEW YORK

MANUFACTURING CHEMISTS TO THE MEDICAL PROFESSION SINCE 1858.

The West Virginia Medical Journal

Directed and Edited by the Committee on Publication

[The Committee on Publication is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible]

JAMES R. BLOSS, *Editor-in-Chief* - - - - - - - - Huntington

ASSOCIATE EDITORS:

WALTER E. VEST, Huntington — HARRY M. HALL, Wheeling — J. HOWARD ANDERSON, Marytown — C. A. RAY, Charleston

MR. JOE W. SAVAGE, *Secretary-Business Manager*, Charleston

Entered as Second Class Matter, January 1, 1926, at the Postoffice at Charleston, West Virginia

Vol. XXV — JANUARY : 1929 — No. 1

THE STOMACH AND THE GENERAL PRACTITIONER *

By MARTIN E. REHFUSS, M.D.
Philadelphia, Pa.

The stomach from time immemorial has been visualized as the seat of many ills. Almost the only visceral organ under the control of the will, it has been subjected to all the vagaries of the imagination, the limitless bounds of confirmed epicures and the habitués of the halls of gastronomic iniquity. Like the spleen and the liver, many evils have been ascribed to it. In the beginning of the nineteenth century Broussais said, "We have without ceasing before our eyes a crowd of human beings who pass their lives tormenting their stomachs with all that the two great living kingdoms (animal and vegetable) produce of a most indigestible type." Throughout the ages the mysteries of "embarass gastrique," "biliousness," "dyspepsia," and other vague terms have been susceptible to many interpretations. Only the pitiless knife of the surgeon, the searching probe of the pathologist, and the merciless scrutiny of the trained clinician, are bringing to light the true facts. One by one facts are supplanting hypotheses. Only too apparent is the fact that the stomach, like all the other organs of the body, follows the same pathological rules, acquires the same diseases, varied only by its peculiar and inherent function. And yet, in spite of these contributions, two facts stand out still incompletely answered, but which dominate the whole story: namely, the formation of the gastric secretion, and the motor factors making up the remarkable sequence resulting in the gastric digestion of food.

On this occasion I would like to call attention to some of the interesting phenomena which are only incompletely understood, but which explain many of the peculiar responses seen in diseases of the stomach.

The first interesting fact is the nature of the response to the introduction of liquids into the stomach. Almost immediately the organ undergoes activity. Acids are neutralized to a normal optimum, alkalies are neutralized and followed by the same phenomenon. Water, coffee, tea, after an appreciable period, are all brought to a certain state of equilibrium. Two things are clear at this point: (1) that we can not introduce anything into the stomach without exciting the secretory mechanism; and (2) in a remarkable way the organ in health reacts almost specifically to all liquids, attempting to reduce them to a favorable condition for evacuation. At this point, if the irritant can not be neutralized or reduced, the stomach exercises its protective function, and by means of vomiting the healthy stomach shows its next great function, namely, a protective one as a sentinel to the rest of the tract, guarding and protecting it by bufferlike action. If the wise doctor realizes this, he

* Read before the West Virginia State Medical Association at Fairmont on May 22, 1928.

JUL 25 1950
COLLEGE OF PHYSICIANS
PHILADELPHIA

will frequently not attempt to arrest vomiting in infected food, poisons, or metabolic poisons such as characterize uremia. If we, as physicians, will study symptoms rather than dull them into insensibility, we will go farther. Only when the symptom in itself is a menace, such as in dehydration, is it necessary to arrest the condition. No drug equals lavage in the treatment of vomiting, and no method of treatment equals sustained lavage in acute gastric dilatation. It is then a life-saving measure.

The next fact of great importance is the strategic position of the pylorus. In health and in normal digestion it probably relaxes every twenty seconds. It is beautifully correlated with antral peristalsis and plays an important rôle in hyperacidity. Its tonus is as variable as the temperament of a prima donna. What is most remarkable, however, is the fact emphasized by Wheelom and Thomas, that stimulation of almost any afferent nerve in the abdomen can induce spasticity. We know it can occur with gallstone colic, with appendicitis, with intestinal adhesions, with subacute and acute lesions in almost any part of the abdomen. The gastroenterologist who studies his cases on the screen realizes this. I have seen every variety of antral and pyloric function. I have seen these purely dependent on emotional imbalance. Realize this great fact, then, that the primary symptom in so far as the patient complains may be gastric, but the true cause may be a gallstone or renal stone, cholecystitis, pancreatitis, colitis, appendicitis, and almost any other inflammatory condition in the abdomen. Appendicitis and cholecystitis notoriously parade under gastric symptomatology. Kidney stone often does, pancreatitis many times, and colon disturbances in the majority of instances, all of them evidence of this extraordinary association. I could spend the afternoon quoting case after case in this category where only careful study revealed the cause, but the picture was purely gastric.

For more than a dozen years I have been studying the gastric curve or response to food. It is a most interesting thing to note what happens. The business of the stomach is to reduce all food to chyme. It finishes the work of the kitchen. If you follow through the digestion of meats, cereals, vegetables and fruits, you will note many points of interest. At first all is heterogeneous, like the masticated undigested food occasionally noted after vomiting. Very gradually this heterogeneous assortment is pulpified and reduced to chyme. I divide the gastric response into three periods. The first is the adjustment phase—an unstable phase—more completely dominated by psychological or emotional impulses than any other phase. At this early stage, twenty to forty minutes, the mental condition of the individual is important. Fatigue, exhaustion, irritability, temper, argument, etc., can undoubtedly delay or arrest this period. Nauseating food, poorly prepared food, violent arguments, unpleasant news, may totally alter this phase. And yet this is an important phase, and one in which the whole gastric laboratory throws its forces into play and seeks to equalize its contents. In studies which we reported some years ago, we demonstrated how important is this early stage, and how necessary it is to enjoy sensibly, without fuss, worry or controversy, the meal.

The next stage I call the "acme" because it represents the high tide of gastric work. The stomach is in the full rhythm of its function. Unconsciously, but with beautiful precision, this phase proceeds almost on a mathematical basis so that each succeeding wave is almost of the same length, and in health, with each peristaltic wave, the pylorus opens. At this stage the stomach impresses one as being automatic; indeed, almost autonomous.

The third stage is a gradual induction into the interdigestive or rest period. It is gradual as the gastric contents are evacuated and the walls of the stomach are approximated. It, too, proceeds steadily in health without fuss or feathers. How different are these stages in disease! I have seen every variation and complete imbalance and total destruction of the rest phase. Time does not permit me to discuss this point, but one thing is clear to me: the sequence of digestion in the diseased stomach is very different from that encountered in the healthy organ.

I want to speak a moment about the digestion of food in the stomach. For a period of eight years Dr. Hawk and I, with the help of a number of men, studied the digestion of all varieties of food in the human stomach. This was the first complete study of food digestion in the untraumatized human stomach. We noted that meat, beef, veal and lamb gave the highest acidity, an average of 120 (HCl); eggs gave 80; vegetables 70; fruits 90; bread and cereals 80; sugars and candies 70; ice cream gave 105, ices 65. This comprised almost a thousand observations through the entire period of digestion and pointed the way to selecting foods from that angle. Lack of time has prevented me from emphasizing the important points derived from these observations. The stomach does not react the same to different foods, nor does it react the same to

different quantities of food. Seventy-five c.c. of mother's milk gave a highest acidity of 45; 150 c.c. 60; 225 c.c. 90; and 400 c.c. of cow's milk gives rise to a highest total acidity of 100 in fifty separate experiments. The same is true of the length of time of gastric digestion. Meats in 100-gram portions give an evacuation time a little over three hours; eggs, 2 hours; vegetables around 2 hours, and many raw vegetables in 1½ hours. Fifty grams of nuts require 4 hours; ice cream requires 3¼ hours, and ices only 2 hours 35 minutes; 75 c.c. of mother's milk requires 1¼ hours; 150 c.c. 1 hour and 40 minutes, and 225 c.c. 2¼ hours; while in the fifty cases where 400 c.c. of cow's milk was studied the average evacuation time was 2½ hours. In slow emptying stomachs, 100 grams of roast beef, well done, required a little over 3 hours, but 250 grams required nearly 6 hours in some cases. It is evident in all this work that not only quality but quantity of food plays a rôle, and, as I shall point out a little later on, the first sign of a diseased stomach is relative food intolerance. While a normal individual can eat almost anything, his capacity becomes definitely reduced when disease steps into the picture. Many a sick patient can handle two ounces of a certain foodstuff when six ounces is absolutely out of the question. If the general practitioner would realize this he would obtain better results in intolerant stomachs.

Disease affects the stomach as it does all other organs, but the mechanism by which disease is induced may be very different. In one individual gastronomic or dietetic errors, overeating, improper eating, or the eating of improperly balanced meals, may explain the story. The poorly arranged diet may result in a colon or bowel disturbance, but very soon these individuals develop gastric intolerance, readily relieved by adjusting the cause of trouble. There are thousands of individuals with ticklish stomachs whose sole fault is faulty elimination at the other end of the digestive tract. But diet alone is not responsible. In another larger group, the physician is at fault, prescribing a whole series of drugs like mercury, iodides, salicylates, colchicum, iron, digitalis, copaiba, sandalwood oil, to mention only a few of the potent causes for an unexplained indigestion. The next great group includes extragastric disease, like cholecystitis, appendicitis, colitis, and duodenitis, which almost never occur without a fullblown gastric picture. These are always back of my mind in every obstinate case of chronic indigestion.

Another great group is due to instability of the visceral nervous system induced by the stringency and rapidity of our modern life, the intense competition, business crises, matrimonial misfits, and all the troubles which are the penalty of modern civilization. Particularly in the group of congenital visceroptotics, numbering one third of every civilized community, stress and strain brings autonomic imbalance with its variety of functional disturbances—belching (ærophagia), distress, discomfort, atony, delay, stasis, and the final picture that of a "conscious stomach," dominating the individual.

Another group of gastric cases is very different. In these we must realize that certain systemic faults are in the background and can induce gastric complaints. In one group focal infections of the upper respiratory tract, sinuses, tonsils, teeth, pulmonary disease, may account for the disturbance. In 400 consecutive cases, Dr. Lerman and I found pus or muco-pus in 147 or 37.6 per cent. If you will use your tube regularly on the fasting stomach, you will be surprised to find the frequency with which this is encountered coming from some focus higher up in the tract. I have seen many a case cleared up by removal of the tonsils.

Chronic cardiac decompensation can produce gastric disease in a different way—by inducing chronic passive congestion of the mucous membrane. When the former is cleared up, gastric restitution follows. In cirrhosis of the liver we have a chronic passive congestion with occasional gastric hemorrhage. In renal disease the gastric intolerance is probably due to the surcharge of toxins of the nonprotein nitrogen class in the blood, because we can demonstrate urea in the vomitus of uremics. I could cover the gastric manifestations of hyperthyroidism, and since the routine determination of the basal metabolism in all suspected cases, many functional gastric conditions fall in this division, and are relieved by rest, sedation, and iodine. Perhaps I am prone to think of this group because I am constantly in contact with them.

I have not said a word regarding the organic gastric lesions, ulcer, cancer, syphilis, gastric crises, ptosis, atony, dilatation, or the gastric inflammations associated with infection. I only wanted to point out two important conclusions—that only a careful résumé of the entire body by all the means at our disposal may explain the gastric condition; and, secondly, whether there be a functional or organic condition, in the great majority of cases there is a reduction of gastric tolerance.

It is this last phenomenon that I would speak of, because, as I have pointed out, in my opinion the

most characteristic thing about a diseased stomach is a reduction in gastric tolerance. A normal individual never knows he has a stomach—he goes blissfully through life, able to eat almost anything without subjective symptomatology; but the diseased stomach protests and reveals its presence by one or many characteristic symptoms, such as anorexia, nausea, and even vomiting, flatulence, distress, discomfort, and actual pain—a series of disturbances dependent upon an arrest or perversion of gastric function.

I always tell my students that most gastric conditions, whether primary or secondary, reveal their presence by some subjective symptom in the course of the gastric digestive cycle, 2 to 4 hours after eating. An inflamed stomach will protest almost immediately, particularly when coarse or indigestible food is introduced; carcinomatous stomach acts very similarly. A ptosed stomach, when overdistended, protests. An ulcerated stomach begins to protest when, at a certain stage in digestion, secretory and motor functions reach their maximum. A nervous stomach protests when nerve strain becomes too great or when the individual is physically exhausted. The stomach in a cardiac case protests when the heart becomes insufficient, and the renal type offers its protest when the too obvious renal retention occurs. Undoubtedly the most striking characteristic of the diseased stomach is its inability to perform its function properly. Instead of pursuing its work automatically, the work is perverted or changed in such a manner that the patient becomes cognizant of the fact.

The most striking thing about the normal stomach is its ability to handle all varieties of food. In health, small amounts of food required a little over one hour. Four or five times that amount required three times the period. An excessively large amount led to actual delay. Disease alters this response. Even simple colds, and particularly after influenza, the secretory output may be completely absent and digestion markedly impaired. But it does not require an infection to do this. We had students who showed this in decided fashion. One student could not curdle milk before his chemistry examination. In the fall, after a summer spent on a farm, his digestion of milk was perfect. After influenza I noted a marked falling off in digestive efficiency, only to recur to normal in a few weeks. Our students, in preprohibition days, used to indulge in alcohol occasionally. I noted in several instances twelve-hour retention which disappeared completely in 24 to 48 hours, as evidence of acute intolerance. It is probable that in many upper digestive conditions, notably those of the biliary tract and upper small bowel, the same sort of intolerance can occur.

Our students, on the psychic secretion, emphasized how important this phase is. I wish I could review in detail our experiments in this connection. There is no doubt in my mind that unpleasant emotions, distasteful food, or even psychic repulsion to food, as well as fatigue, can induce digestive disturbances, while an agreeable state of mind and agreeable sensations generally are conducive to good digestion.

The evidence supports the belief that the diseased stomach reveals the first presence of disease by food intolerance. He will first restrict certain foods which according to his experience do not agree with him. If he has overeaten, he will have no appetite for food. If his stomach is inflamed or he has chronic gastritis, he will immediately and almost intuitively cut down his diet to a soft dietary. If he has an ulcer, he quickly finds out that certain foods do not agree with him, and if he has a duodenal ulcer and is at all observant, he quickly learns that the empty stomach craves food, that food relieves his distress, and that certain foods do it better than others. In atonic conditions, excessive food soon makes its presence manifest, and foods which require a long period of gastric digestion are especially difficult to handle. It may be said that the diseased stomach acts by producing a relative food intolerance. This intolerance is directed toward the foods which make the greatest demand on the stomach in this condition. A properly arranged dietary, bearing in mind the essential features of the case and the ability of the organ to handle food, is often followed by rapid and complete relief. We can measure tolerance by studying carefully the results of a test meal. This includes a study of not only the secretory output but also the evidence of motor function as revealed by the degree of chymification and the length of time it takes to digest a certain meal.

There is a group of reflex gastric conditions characterized by ærophagia, where the character of the food makes little or no difference. This is seen in many conditions outside of the stomach—adhesions, gallstones, cholecystitis, pancreatitis, appendicitis, as well as endocrine and purely nervous conditions where this rule does not hold. The intolerance in these cases is rarely specific.

It is needless to point out that in every stubborn case the practitioner must bring all the skill at his disposal, but it is surprising in how many instances

a carefully taken history, a careful physical examination, the use of the gastroduodenal tube, and a study of the feces, will reveal the cause of trouble. The x-ray is indispensable to an exact study of the stomach, but the physician should use this as an adjunct and he should control the results of treatment röntgenographically. In every case the first question will be the diagnosis, but the diagnosis of gastric disease which does not throw light on gastric tolerance is incomplete. This information is most conveniently supplied by the tube. If physicians would only realize how easy it is to answer a question of this type by means of the tube, and how convincing it is to the patient! If you are doubtful about a certain meal, give it and make an examination. Don't be hidebound to a single test meal. A little while ago I told a certain patient that chocolate was not good for her. She had her serious doubts. Six hours later, after eating chocolate, I pumped out the chocolate. She was convinced. Such demonstrations do more good than hours of talk. My only purpose in this topic is to point the way to gastric disturbances which are at every physician's elbow.

Discussion

DR. J. H. BABER (Huntington, W. Va.): The problems of the general practitioner are in common with those of the gastroenterologist in the study of the diagnosis and treatment of disease of the digestive tract, and we are fortunate, indeed, to have with us today an eminent internist, scholar and investigator who has for many years bent his efforts toward the establishment of improved methods of approach and higher refinements of technique and procedure in the general conduct of these cases, and I want to thank Dr. Rehfuss for coming down here and giving us a share of the benefits of his long experience, in reading this excellent paper. I would not attempt a detailed discussion here because the subject has been so well treated, so comprehensively covered, that I think you may be better satisfied if I let it rest on its high merit.

The Patient Pays the Piper

More moderate-priced hospital beds will help to relieve the present high nursing charges, and better organization of nursing service with available part-time nurses coming from a community center will mitigate the excessive cost of private nursing in the home. For smaller communities the community hospital and health center with community nursing service will do much toward providing more adequate relief at reduced expense. The public wants and deserves good medical care at a lower cost. The physician wants and deserves an assured income and a comfortable living as a recompense for his services. Earnest efforts are being made for the attainment of this millennium, but let us not forget that our annual bill for patent medicines still runs into the millions, and that we are still supporting a host of cultists, quacks, and irregular practitioners.—JOSEPH GARLAND, *The Independent*, September 15, 1928.

CARCINOMA OF THE RECTUM *

By FRED W. RANKIN, M.D.
Division of Surgery, The Mayo Clinic
and
ROBERT DUVAL JONES, M.D.
Fellow in Surgery, The Mayo Foundation
Rochester, Minnesota

Many victims of rectal neoplasm are unaware of serious trouble until the lesion is well advanced. This is due to the mildness of symptoms in the early stages and the relative frequency of less significant rectal complaints. Practically all growths reach the stage of ulceration or cause mild obstruction before suggestive symptoms appear. Even then, there may be so little distress that a period of months or even more than a year may pass before the patient seeks medical advice. The average duration of symptoms in cases of carcinoma of the rectum at The Mayo Clinic is about one year (eleven and seven-tenths months).

Carcinoma of the rectum is apparently becoming more common. Whether the disease is more prevalent or the clinician more skillful with the modern means of diagnosis is a matter of speculation, but certainly the disease is being recognized more frequently than ever before. About 10 per cent of all carcinomas of the alimentary tract are situated in the large bowel, and of these more than half are at or below the rectosigmoid juncture.

Males are affected more commonly than females. In a group of 300 cases recently reviewed by one of us (Jones), the proportion of males to females was 3:2. In this group the average age was fifty-seven years; most of the patients were between forty and seventy. However, the disease is often found in young persons; 3.66 per cent of patients were between twenty and thirty.

Pathology

The three most common sites of rectal carcinoma,

* Read before the West Virginia State Medical Association, Fairmont, May 21 to 24, 1928.

in order of frequency, are the rectosigmoid juncture, the ampulla of the rectum, and the anal canal. The site is significant because of its bearing on fixation and the type of symptoms encountered. Growths at the rectosigmoid juncture usually have their origin close to the mesenteric border, and by infiltration and extension affix themselves to the fascia propria of the rectum. Growths in the anal canal, on the other hand, are usually found opposite the mesenteric border and are rarely obstructive except in advanced stages. Growths at the level of the rectosigmoid juncture may telescope into the rectum so that they are easily palpated by the examining finger. In women such growths may drop into the cul de sac and become attached to the posterior wall of the uterus.

Carcinoma of the rectum is classified in several varieties according to physical characteristics and gross appearance: papillary, polypoid, mucoid, infiltrating, constricting, and so forth.

On histologic examination most rectal carcinomas are found to be adenocarcinomas. The growths arise from the cylindrical cells of Lieberkühn's follicles. Many of the lower growths, however, are true squamous-cell epitheliomas or epidermoid carcinomas. In a series of cases recently reported[1] there was one melano-epithelioma just inside the anal ring. This type of tumor is very rare. When squamous-cell epithelioma is found above the region of the anal canal, its origin is explained on the theory that the regenerative cells of glandular epithelium have the power to produce either a secretory (glandular) or a protective (squamous) epithelium.

The microscopic picture of adenocarcinoma of the rectum varies widely. The cells of one growth may be so completely differentiated and arranged in such perfect glandular and acinous formation that they are difficult to distinguish from those of normal rectal tissue. The cells of another growth may be so poorly differentiated that scarcely a trace of glandular formation can be found. In the more highly differentiated growths mitotic figures may or may not be found, and if found are usually regular, in contrast to multiple irregular mitosis in the more malignant cellular growths. The individual cells are usually large, irregularly roundish and deeply stained. As a whole, they have lost their columnar form. If the more malignant growths tend to form glands or acini, the cells are not, as a rule, in good alignment and individually show little tendency to differentiation.

Mucoid or colloid secretion may be associated with cells in all degrees of differentiation. If the secretion is abundant the cells are usually of the more highly differentiated columnar type. In the growths containing cells which tend to be undifferentiated the secretion is less abundant and may be retained within the cells, in which case the nuclei are pushed to one side, and the cells have a characteristic "signet-ring" appearance.

Fortunately, metastasis is slow in most neoplasms of the rectum and colon, although its incidence increases in direct proportion to the degree of malignancy. When metastasis does occur it may be expected first in the inguinal or retroperitoneal lymph nodes, depending on the site of the primary lesion. This is because the region of the anal canal and anal margin is drained by lymphatics which run forward into the groin, and the rectum above this level is drained by the retroperitoneal and lateral lymphatics. If remote metastasis occurs, the liver is usually affected first.

Symptoms and Diagnosis

The signs and symptoms of carcinoma of the rectum may be different in different persons, and any of them may be produced by other rectal or intestinal disorders. Loss of weight is not usually appreciable until late in the course of the disease. In fact, most patients examined in The Mayo Clinic have been in such apparent good health, in spite of long histories and advanced lesions, that we have begun to think of the robust person as the type in whom rectal neoplasms are prone to develop. In our series of cases we have attempted to classify the patients according to the Nylic Standard Table of Heights and Weights of the New York Life Insurance Company. Results show that 56 per cent of our patients were normal or obese at the time of examination (averaging eleven and seven-tenths months after the onset of symptoms). In the group in which emaciation was recorded 53 per cent were normal or obese at the onset of their trouble, making a total of 223 (74.03 per cent of the entire group) who were well nourished at the onset of symptoms. Although there were several patients who had shown a slight gain in weight about the time of the onset, none had gained sufficient weight to warrant a change in classification, whereas about 25.3 per cent had lost sufficient weight to be changed from the obese group to the normal, or from the normal to the emaciated.

Loss of strength, likewise, is not conspicuous in the early stages of carcinoma of the rectum. One

hundred and twelve (30 per cent) of our patients complained of weakness, and of these loss of strength was conspicuous in only 12.5 per cent. There was, however, a noticeable difference in the amount of strength lost by patients with operable and inoperable lesions. In the cases in which only colostomy was performed, marked weakness was a symptom in 41 per cent; but in the cases in which the lesion was resected, loss of strength was a symptom in only 24.6 per cent. This is evidence of the rapid undermining of vitality by metastasis, usually occurring in the liver.

Hemorrhage is the most constant sign of malignancy in the rectum. It may appear mixed with the stools or simply streaking them. The former is probably noted more frequently. Eighty-eight per cent of our patients complained of bleeding which ranged from alarming mesenteric hemorrhage to occasional sprinkling of blood. Most of the patients had noticed bleeding for a period of several months, and in 27.5 per cent the earliest symptom of neoplasm was blood in the stool. The average hemoglobin reading in this group, however, was 72 per cent, showing that anemia in carcinoma of the rectum, except when the disease is far advanced and metastasis has occurred, is not as common a complication as it is in carcinoma of the right segment of the colon.

The significant fact to be impressed on the laity as well as the profession is that any change from the normal bowel habit should suggest the possibility of malignancy. Increasing constipation, frequency of stools, and alternating constipation and diarrhea are common and significant symptoms. If constipation predominates, the patient usually pays little attention to it until cathartics fail to give relief, or until the occurrence of associated signs or symptoms, such as pain or blood in the stools. When diarrhea is the prevailing symptom, the history may be misleading, as the average patient is likely to consider anything diarrhea from a frequent desire to go to stool to ten or twelve large, watery stools a day. Usually it does not cause alarm until the patient has become dehydrated or weakened from the loss of fluids. If this were fully appreciated, the large bowel would be examined more carefully as a routine procedure, with the result that more cases of carcinoma of the rectum would be discovered much earlier and surgical intervention would be rendered more satisfactory.

Hemorrhoids are frequently associated with rectal malignancy and in many instances are very misleading. Approximately a third of our patients had been suffering from hemorrhoids and in about a third of these (10 per cent of the entire group) operation had been performed elsewhere for hemorrhoids after the onset of symptoms. Unfortunately, persons are prone to attribute any rectal pain or bleeding to piles.

Pain is seldom a prominent symptom of carcinoma of the rectum until the malignancy is far advanced. When the growth has become fixed with involvement of other viscera, or when terminal volvulus sets in, the pain may be severe. Sacral pain, backache and shooting pains in the hips and thighs are common complaints and suggest metastasis to the bones or root pains resulting from pressure on the sacral nerves.

Acute or chronic obstruction, with distention and cramping, causes a great many patients with carcinoma of the rectum to seek medical advice. Too much emphasis can not be placed on the significance of obstruction as a complication, for the type of operation indicated as well as a surgical prognosis depends largely on the degree of obstruction. The permeability of the wall of the bowel is rapidly increased, thus rendering an already thin anatomic structure more vulnerable. Under such conditions the slightest surgical trauma will transmit infectious organisms to the peritoneal cavity.

From review of the common phenomena of carcinoma of the rectum encountered in our group of cases, it is evident that in most cases the early symptoms are unreliable. There is no group of signs or symptoms which may be considered pathognomonic for the disease. For this reason too much reliance should never be placed on the history in the diagnosis of rectal complaints. In every case in which there are symptoms, however slight, which suggest the colon or rectum as the site of an organic lesion, a thorough routine examination should be made of these viscera. This is particularly applicable to cases in which there are unexplained changes in bowel habit, or in which blood has been found in the stools even for a short time. In such cases, malignancy should always be suspected until the absence of neoplasm has been established by proctoscopic and röntgenographic investigation. Digital examination is generally conclusive in carcinoma of the rectum, and should always be carried out. Occasionally, however, inflammatory lesions may be deceiving.

The appearance of carcinoma of the rectum as revealed by endoscopy is rarely confusing to the

experienced operator. Any lesion in the rectum, whether it is an ulcer or a proliferating mass, should be regarded with suspicion, and if there is no evidence of inflammation in the adjacent mucosa it is probably malignant. If the lesion is necrotic and bleeds easily, the evidence is almost conclusive in favor of malignancy. Tuberculous or syphilitic lesions may sometimes be confusing in the diagnosis, but such lesions are rare. When these facts are more widely appreciated, digital and endoscopic examinations will be carried out more frequently, with the result that a much higher percentage of cases of carcinoma of the rectum in which medical advice is sought will be diagnosed early, more patients will request surgery during the operable stage, and the percentage of five-year cures or freedom from recurrence will be gratifying.

Treatment

Radical extirpation of the rectum with wide excision of contiguous gland-bearing tissue is generally accepted as the best treatment for carcinoma of the rectum. Occasionally, in advanced cases in which operation has been refused, radium has been used with fairly satisfactory results. Our experience in this field, however, has been too limited to warrant an expression of opinion. As a routine palliative measure, we believe that radium has a limited field.

The choice of operation for carcinoma of the rectum varies with the individual case. Certainly at least four operations should be considered before radical extirpation of the rectum is undertaken. They are: (1) the combined abdominoperineal operation in one stage; (2) the graded combined abdominoperineal operation; (3) colostomy followed by posterior resection, and (4) extirpation of the rectum with the formation of a sacral anus. The ideal procedure is extirpation and an artificial anus at one stage, but such an operation is advisable only in a small group of early cases in which obstruction has not occurred and the general physical condition is good. We believe that most cases of carcinoma of the rectum are best treated surgically by a graded operation in which colostomy is made and later followed by extirpation of the lower segment of the bowel. The latter may be done by either the combined abdominoperineal or posterior resection. Extirpation of the rectum and a sacral anus should be reserved for elderly, obese patients, when the surgical risk of an abdominal section is high.

Unfortunately, the prognosis in carcinoma of the rectum has always been considered extremely grave. Colostomy has been regarded as a horrible fate and the end-results following surgery poor. Our statistics, however, show many favorable data with regard to the surgical treatment of cancer in this region. Many of our patients have not found colostomy particularly burdensome and the percentage of three- and five-year cures of malignancy of the rectum has been more gratifying than for malignancy in any other part of the body. With increasing familiarity with the surgical technique of resection of the large bowel and rectum, and a better understanding of the underlying physiologic factors involved, we hope to achieve a still lower mortality rate and more satisfactory end-results.

Discussion

DR. W. S. FULTON (Wheeling): Dr. Rankin and members of the West Virginia Medical Society: I certainly am deeply gratified to hear Dr. Rankin's paper this afternoon, and I want to congratulate him as well as Dr. Lilienthal for their courage in reopening this subject, which was gradually coming into disrepute.

In tuberculosis work, we can all remember when a patient came to our office and we would say, "You have tuberculosis. Go West." Those of you who have read Bonney's work on tuberculosis are familiar with his description of those suffering people whom we sent west, their experiences after they went there, with doors closed against them. They stayed there until they became public charges upon the different states to which they went, with no one to care for them. When you heard Dr. Lilienthal today tell us what we are trying to do for them, and when we hear Dr. Rankin tell us what he and others are trying to do for people suffering from another illness it really makes us feel that we are accomplishing something.

You remember the old Kraske operation that some of us tried to do some twenty years ago, and the best mortality that was ever obtained from that operation was 25 per cent. Dr. Rankin, Dr. Coffey, and others have worked out a technique now by which the whole pelvic floor can be disclosed, whereby they can devascularize the whole pelvis, whereby they can go ahead and study the case and see whether or not it is an operable or an inoperable case.

I think the first thing that led these gentlemen to do a preliminary colostomy was the fact that they wanted to see inside the abdomen, to see whether or not the liver or other organs were involved so that they could tell whether the case should be

operated or not. Then when they did that they thought, "Why not do this in two stages?" So they did their colostomy and went down as far as they could from the inside. And you remember the point that Dr. Coffey brought out afterward. Some one said, "Why don't you go on and do this in one stage, as they did with the old Kraske operation?" He spoke of the mortality and the shock to the patient, but that keen observer said, "Two weeks after you have done your colostomy and have done your work in the floor of the pelvis, nature has thrown out a wall in trying to heal, and all the tissue around this becomes edematous and when you make your perineal incision and go up to that it peels out like a gallbladder that is slightly inflamed, from its fissure, making this operation much easier.

The other point that the Doctor has given us—one that we should never forget and that should always be put over at a meeting of this kind—is that a complete physical examination should be made of the patient, and a complete history taken, inquiring into not only the symptoms of which he complains but everything should be noted, and particularly his symptoms regarding the rectum. I am sure that if these cases are diagnosed early, before we get a metastasis, before they become devitalized, in the hands of Dr. Rankin this mortality would be reduced, barring the accident of hemorrhage to possibly two per cent.

A carcinoma of the rectum, as we know, is spread by continuity of tissue, by circulation through the venous system, and by the lymphatic system. The earlier the diagnosis the more hope you have of preventing a metastasis. By your wide incision, by tying off your hemorrhoidal veins, by getting rid of your pelvic back, you stop the carrying of your cells to the liver; you block off your lymphatics, and it can practically be done by one ligature.

So, when we think of what has been done, those of us who have tried the old Kraske operation with its high mortality, when we think of the years when a patient suffering with cancer of the rectum would come to us and we would close our doors on him and send him away, as we did the old tuberculosis patients, and when we think of the stage to which we have come, when we can really give them hope, when men are working out this technique and studying it and can save these people, we, I say, should congratulate ourselves.

DR. RANKIN (*closing the discussion*): There is just one thing I might tell you about the management of these cases that we think is proving advantageous, and that is a coöperative type of management, whereby they are isolated into a single group under the direction of the internist and the surgeon at the same time. They are placed in the hospital and the efforts are directed at two things: the rehabilitation of the individual by supportive measures and the cleansing out of the bowel, and the preparation of the local field of operation so that there will be no obstruction present, or possible, or as little as possible, and reducing the local infection as much as possible at the same time by irrigations and by proper dietary régime.

Then the selection of operation is invariably a graded one. I say "invariably," but that is not quite true. I don't think that we do more than four or five per cent of these cases in one stage, and there is some particular indication for a single-stage operation of this magnitude.

A third thing, which I hesitate to mention and which I know is quite controversial, is the use as a routine of spinal anesthesia in this group of colon cases and rectal cases, both for the colostomy and for the resection. I don't defend it. I don't disagree with one who is alarmed at its use, because I feel uncomfortable about it, myself. But I do believe it has been a most valuable adjunct, and so far we have been entirely happy in its application.

REFERENCES

Rankin, F. W., and Broders, A. C.: Factors influencing prognosis in carcinoma of the rectum. *Surg., Gynec., and Obst.*, 1928, xlvi, 660-667.

ACUTE OSTEOMYELITIS *

DIAGNOSIS AND TREATMENT

By C. W. STALLARD, M.D.
Montgomery, W. Va.

In the diagnosis and treatment, acute osteomyelitis may be compared to an acute appendicitis. The diagnosis of one should be no more difficult than the other, and the treatment is equally important in both. Unfortunately, the comparison ceases at this point. In the great majority of acute appendicitis cases, the diagnosis is promptly made and equally as promptly treated by the correct surgical measures.

On the other hand, acute osteomyelitis is diagnosed correctly only in a relatively small percentage of cases, and it is treated so largely by medical methods that an acute case is rarely seen in its initial stages in the surgical wards of hospitals.

---

* Read before the Fayette County Medical Society at Montgomery, West Virginia, May 8, 1928.

From the Department of Orthopedics, Coal Valley Hospital, Montgomery, West Virginia.

The general practitioner is blamed unjustly for many things, but the tragedies of acute osteomyelitis often lie at his door. He sees the patient first; he makes the diagnosis, and in a large number of cases he makes it incorrectly; prescribes some form of salicylates at the only time when benefit can be expected from anything short of a mutilating operation. Then, when the damage is done, the true condition revealed, the patient is turned over to the surgeon, who is supposed to work the miracle of a cure in the face of extensive bone destruction and lessened constitutional resistance. The giving of a cathartic has complicated appendiceal cases, and in exactly the same way medical treatment of osteomyelitis and the resulting loss of time may convert a relatively simple condition into one jeopardizing both life and limb. In a hospital in New Orleans, for a period of six years, the records of all acute osteomyelitis cases show that 25% were sent in without a diagnosis; 50% were diagnosed incorrectly, and in only 25% of the cases a tentative diagnosis was made in spite of the fact that all of the latter group exhibited fairly advanced stages of the disease. In other words, not a single case of acute osteomyelitis was positively diagnosed outside the hospital. The astonishing fact is that the diagnosis is easily made if the disease is only borne in mind. The clinical picture is usually clear-cut.

Acute osteomyelitis occurs most often in young children, due to minor skin infections in the summer and to respiratory infections in the winter. Traumatism is not an important consideration except in so far as it assists in localization of the infection by providing a suitable field for the growth of the bacteria.

The first symptom is persistent, localized, boring pain near, but not in, a joint, followed by chills, temperature 103° to 105° F., toxemia, and leukocytosis. This syndrome is pathognomonic of acute osteomyelitis. It may be well to add that a negative x-ray confirms the diagnosis. Positive x-ray comes on after destruction of bone has set in and is usually later in the acute stage.

Localized pain in an extremity should rule out intestinal upsets and typhoid fever. Acute articular rheumatism and acute infectious arthritis are usually confused in the diagnosis, but in each case the onset is more gradual, there are less constitutional disurbances, definite localization of pain in the joint rather than in its neighborhood, and they are nearly always multiple. Also, in arthritis there is more joint fixation, due to muscular spasm, and the synovial membrane is markedly swollen as compared to early negative findings in osteomyelitis.

Osteomyelitis is primarily a metastatic blood-borne disease, originating in some minor skin infection or disease of the cavities of the head. The necessity for early treatment is clear. The septic infarct, which is always small, is arrested by the smallest capillaries of the body, especially so by those of the metaphysis of any of the long bones forming a true bone abscess. Unyielding bone can not and does not swell as do the soft tissues of the body. Therefore bone inflammation can end in only one way—necrosis from local anemia, this necrosis becoming more and more extensive and the toxemia more extreme if an avenue of escape is not opened. A terminal septicemia may result and the patient may lose his life or his limb. If he survives, radical surgery is necessary, ranging all the way from simple removal of the sequestrum to complete excision of the shaft of the bone and sometimes amputation.

Our method of treatment is that carried out by Dr. H. W. Orr, the orthopedic surgeon of Lincoln, Nebraska, and his method is thoroughly described in *Surgery, Gynecology and Obstetrics*, issue of October, 1927. Suffice it to say that his treatment, which we are following, consists essentially of:

1. Adequate drainage.
2. Rest.
3. Prevention of reinfection and disturbance of the wound.

1. Adequate Drainage.

(*a*) This is done by making a wide incision over the diseased bone. I might add here the words of McNamara, who said that patients have died from not having the inflamed tissues sufficiently incised; but I doubt if a child has ever lost its life in a case of this kind from a surgeon making too free use of the knife. After the wide incision through the skin is made, the skin, together with fasciæ, muscles, and periosteum, are pushed back just far enough to expose the diseased bone and no farther.

(*b*) Then with a chisel or curette make a window into the affected bone large enough for all the diseased bone to be removed, leaving no overhanging edges of bone over the diseased portion.

(*c*) Then clean out all the diseased bone gently with the curette, being careful not to do unnecessary damage.

(*d*) Dry the wound; wipe out with full-strength tincture of iodine, followed by 90% alcohol. (This step is not absolutely necessary.)

(*e*) Pack the entire wound wide open tightly

with sterile vaseline gauze and cover this with a sterile dressing, after which we are ready for our second step, viz.:

2. Rest.

This is accomplished by immobilization of the part. We immobilize the affected part by applying a plaster cast, including in this cast the joints both above and below. After the cast is applied it is not to be split nor are windows cut in it until the wound needs redressing. We do not redress the wound for a period of four to six weeks unless there are signs of acute sepsis. Odor, as a rule, is no indication for a redressing. Then last, but not least, we come to the third step, viz.:

3. Prevention of a Reinfection and Disturbance of the Wound.

Since the time of Lister there has developed a disposition on the part of the surgical profession to regard wound treatment as a contest between the germs in the wound and the antiseptic employed; the severer the infection the stronger the antiseptic. We should bear in mind that in every infected wound there is a certain amount of septicemia that the patient has to fight, himself, and it is this wound treatment that determines whether or not this is combated successfully. This prevention of reinfection is brought about by infrequent dressings, since along with the so-called antiseptic dressings additional infection may be introduced through the air, through soiled dressings, through instruments or by the fingers of the one doing the redressings. The most important fact is that the proper treatment of any inflamed process is rest. Thus, rest for the wound means infrequent dressings. Frequent dressings do not allow a clean wound to rest; are likely to infect the wound; and if infection sets in all consideration of rest is cast aside in the interest of irrigations, etc. To prevent reinfection, redressings are done under the strictest aseptic precautions, after which a cast is reapplied.

Among the advantages of this type of treatment we might mention are:

1. The relief afforded the patient. In children, especially, the suffering is reduced and there is improvement of the appetite and general physical condition. Even adults are much more comfortable and seem to do better because of the relief from infrequent dressings.

2. The surgeon himself is able to do his own redressings. This enables him to carry out his original deas as to position of the limb, etc., and dressings lone under his own eyes are carried out properly. If this is not done, late in the disease or after it has become chronic, the patients get so far away from the surgeon that untrained attendants as well as the patient redress the wound, which results in a secondary infection and the end-results are poor.

3. The wound, after four or six weeks, shows less drainage than do wounds that are redressed daily.

4. Great saving in material and labor.

5. Infrequent dressings make it possible for the surgeon to become responsible for the post-operative care.

6. If nature is left to do her own immobilizing, life may be preserved; but contracture, deformity and disability are invariably the result.

Discussion

DR. C. A. RAY (Charleston): In considering this method of treatment, it is interesting to me to know the condition of the patient as well as the wound during the time between the operation and the following redressings.

DR. A. S. JONES (Huntington): I make a special effort to preserve all of the periosteum possible and only expose enough of the bone to permit the removal of a sufficient amount to furnish adequate drainage. The periosteum over this bone is removed at the same time. I do not do a very extensive operation the first time, and, if need be, do a second operation at a later date. After the removal of the diseased bone I take care of the wound by packing with iodoform gauze, and I have never used in the wound iodine followed by alcohol or packed them with sterile vaseline gauze. I immobilize my cases with plaster paris cast and follow this with infrequent redressings in order that nature can take care of the wound through the proper medium, viz., rest.

DR. RALPH HOGSHEAD (Cannelton): I would like to know if the iodine always precedes the alcohol.

DR. C. W. STALLARD (*closing the discussion*): In closing I wish to state, in reference to Dr. Ray's questions, that after the first twenty-four to forty-eight hours the patient's temperature gradually recedes to normal and usually remains so. The patient is absolutely free of pain, is not toxic, runs an uneventful course, and usually gains several pounds in weight during the convalescence. At the end of four to six weeks, when the wound is redressed all the dressings are usually saturated with drainage. This drainage is well out of the wound along the edges of the vaseline gauze. The pus contained in the wound is far less than would be obtained on daily redressings. Marked healthy granulating tissue is

noted along the wound margins and newly formed bone looks healthy.

In reference to Dr. Jones' discussion, I never use the iodoform gauze, as I do not believe the drainage is nearly as good as the vaseline gauze packing over a long period of time. I, too, take special precaution in preserving as much of the periosteum as possible, and remove enough of the diseased bone at the first operation to obtain adequate drainage.

In answer to Dr. Hogshead's question, the iodine always precedes the alcohol; but I firmly believe that these chemicals can be omitted with as good or possibly quicker and better results.

REFERENCES

1. Urban Maes, M. D., Editorial on "Diagnosis, The Crux of the Problem of Acute Osteomyelitis," S. G. O. Vol. XLVI, No. 1, page 135, January, 1928.
2. H. Winnett Orr, M. D., "The Treatment of Osteomyelitis and Other Infected Wounds by Drainage and Rest," S. G. O. Vol. XLV, No. 4, page446, October, 1927.
3. Whitman's Orthopedic Surgery, Revised Eighth Edition.
4. Nelson's Loos-Leaf Surgery, Latt esEdition.

CLINICAL PROGNOSIS IN CANCER OF THE BREAST *

By F. E. BUNTS, M.D.
Cleveland Clinic
Cleveland, Ohio

In a recent analysis of 1,161 cases of carcinoma of the breast appearing on our records at the Cleveland Clinic we found that we were able partially or wholly to trace the life history subsequent to operation in 867 cases. In 261 cases the patients had been lost sight of, and in 33 we had the record of their deaths but no data was given, so that we were obliged to omit them from the statistical computations given in the following record:

TABLE I.

CARCINOMA OF THE BREAST

Total number of cases in which operation was performed	1,161
No trace	261
Died (date not known)	33
Total number of traced cases	867

LIVING

3 years	324	37.3%
5 years	209	24.1%
10 years	83	9.5%
15 years	36	4.1%

* Original paper.

There is one error which naturally occurs in these statistics: a number of the deaths may have occurred from other causes than recurrence of the cancer. This seems especially likely because many of the patients had reached an age in which death from another cause might well occur. It is probable, however, that deaths several years after operation ascribed to pneumonia are most frequently due to metastasis in the lungs, and the diagnosis of pneumonia is incorrect. In any event we may assume that, should the true cause of death be known in every case, the statistics would show a slight improvement over those here cited.

An attempt was made to estimate the comparative longevity in respect to the size of the breast tumors. Unfortunately, owing to the various ways in which the size of the tumors was described, it was found necessary to divide them arbitrarily into three groups—large, medium, and small. The result of this analysis appears in Table II.

In order to estimate any possible influence which the location of the tumor may have upon longevity, an analysis was made, based upon the position of the tumors; that is, whether they were situated in the upper inner, upper outer, lower inner or lower outer quadrant, in the center or nipple area, or whether they involved the entire breast.

In Table IV an attempt was made to differentiate between those cases in which the presence or absence of axillary involvement was recorded, but it not infrequently happens—particularly in stout patients—that glands which are moderately enlarged can not be palpated but are revealed later at operation when the axillary fat is dissected out. This fact must be taken into consideration in reading Table IV.

A similar analysis of the results in cases in which it was noted that the supraclavicular glands were or were not involved is shown in Table V.

In 240 cases the type of the tumor was given, based either on its clinical or microscopic character, and the longevity in respect to the type of the growth is shown in Table VI.

On reviewing these tables we note that, while there is not a marked difference in life expectancy

TABLE II.—SIZE.

	LIVING					
	1–3 Years	*3 Years*	*5 Years*	*10 Years*	*15 Years*	*Total Counted in Each Group*
Large	131—62%	104—49.3%	59—28%	31—14.7%	11— 5.2%	211
Medium	46—62.2%	21—28.4%	17—23%	8—10.8%	3— 4.0%	74
Small	39—76.5%	23—45.1%	16—31.4%	11—21.6%	6—11.8%	51
Total	216	148	92	50	20	

between cases of large and of small tumors during the first five years, a very much larger percentage of the patients with small tumors are living ten and fifteen years after operation. It is difficult to account for the apparently lessened longevity in the cases in which the tumors were medium in size, except that one may suppose that they should perhaps have been classed with the group of large tumors.

In Table III we find that the longevity in the cases in which the tumors were in the upper outer quadrant is less than that in the case of tumors in any other location, while the greatest life expectancy is in that group in which the tumor is in the lower outer quadrant, the group with central involvement being a close second. I believe that operators who have had experience with a large number of cancers of the breast will feel that their clinical experience coincides largely with these statistical deductions.

In Table IV the advantage of early recognition of the tumor before extensive axillary involvement has taken place is apparent, and could we eliminate these cases in which operation revealed that glands which had not been palpable were actually invaded by cancer cells, the proportionate difference in the longevity of the two groups would have been vastly greater.

TABLE III.—LOCATION.

	LIVING					Total Counted in Each Group
	1–3 Years	*3 Years*	*5 Years*	*10 Years*	*15 Years*	
Upper outer quadrant	83—61%	54—39.7%	29—21.3%	14—10.3%	5— 3.7%	136
Upper inner quadrant	30—71.4%	19—45.2%	16—38.1%	7—16.7%	3— 7.1%	42
Lower outer quadrant	37—78.7%	27—57.4%	16—34%	8—17%	5—10.6%	47
Lower inner quadrant	11—55%	10—50%	5—25%	1— 5%		20
Center	43—70.5%	35—57.4%	24—39.3%	10—16.4%	5— 8.2%	61
Entire breast	6—54.5%	5—45.4%	1— 9.1%	2—20%	2—2%	11
Total	210	150	91	32	15	

TABLE IV.—AXILLARY GLANDS.

	LIVING					Total Counted in Each Group
	1–3 Years	*3 Years*	*5 Years*	*10 Years*	*15 Years*	
Involved	170—53.5%	105—33%	64—20.1%	28— 8.8%	10—3.1%	318
Not involved	77—77.7%	54—55%	35—35.4%	18—18.2%	8—8.1%	99
Total	247	159	99	46	18	

TABLE V.—SUPRACLAVICULAR GLANDS.

	LIVING					Total Counted in Each Group
	1–3 Years	*3 Years*	*5 Years*	*10 Years*	*15 Years*	
Involved	11—50%	7—31.8%	2— 9.1%	1— 4.5%	1— 4.5%	22
Not involved	45—71.4%	24—38.1%	7—11.1%	2— 3.2%	1— 1.6%	63
Total	56	31	9	3	2	

TABLE VI.—PATHOLOGY.

	LIVING					Total Counted in Each Group
	1–3 Years	*3 Years*	*5 Years*	*10 Years*	*15 Years*	
Scirrhous	87—61.7%	59—41.8%	38—26.9%	17—12.0%	5— 3.5%	141
Adenocarcinoma	59—78.7%	38—50.7%	26—34.7%	13—17.3%	4— 5.3%	75
Simplex	44—73.3%	19—31.6%	12—20%	1—16.6%	1—16.6%	60
Medullary	35—70%	15—30%	8—16%	1— 2%		50
Ductile	12—63.2%	10—52.6%	5—26.3%	1— 5.2%		19
Colloid	3—75%	3—75%	3—75%	2—50%		4
Total	240	144	87	35	10	

The involvement of the supraclavicular glands always calls for a grave prognosis. Unfortunately, the number of cases in which their presence or absence was noted is small. It is interesting to note that in one case in which the supraclavicular glands were recognizably enlarged at the time of operation, the patient lived at least fifteen years. Whether or not this enlargement of supraclavicular glands was always a metastasis is doubtful, for it has not been our general practice to remove these glands and, therefore, microscopical confirmation is wanting.

Table VI gives some idea as to life expectancy in respect to the clinical character of the tumor, and emphasizes the fact that medullary cancers are the most rapidly fatal of all, while cases of adenocarcinoma seem to have the most favorable outlook.

The deductions made from these tables have probably very little scientific value, and yet when one is confronted by the invariable inquiry as to how long the patient has to live, they may, in connection with the clinical examination, at least serve as helpful suggestions. It must always be borne in mind, however, that, in general, cancers grow more slowly in the middle-aged, and that the youth of the patient and pregnancy, in particular, add very materially to the rapidity of its progress.

OBSERVATIONS ON THE ETIOLOGY AND TREATMENT OF PEPTIC ULCER *

By WALTER D. SIMMONS, M.D.
Slab Fork, W. Va.

In our modern manner of living, with its tendency to constipation, its nerve strain and excesses, the wonder is that we do not have more organic gastrointestinal disease. We wear belts that press the pylorus and duodenum against the spine. We put hot foods and drinks, condiments, alcohol and other irritants into our stomachs that we would not bear on our skins.

Dyspepsia or indigestion is a frequent complaint, though organic disease of the stomach or duodenum is infrequently a cause. Dyspepsia may be a manifestation of cardiovascular renal disease, primary anemia, tuberculosis, or other constitutional disease. It may be a manifestation of fatigue or nervous disorder. It may be caused by excess in tobacco use, or it may be a reflex symptom of other intraabdominal disease. But every case of dyspepsia should be examined sufficiently to exclude organic disease.

"Peptic ulcer, its cause and treatment" has been the subject of investigation and discussion by the surgeon, the internist and the laboratory worker for many years.

A peptic ulcer may be defined as an ulceration in the stomach or duodenum, in the formation or continuation of which gastric juice plays a part.

Peptic ulcer starts as an erosion of the mucous membrane, caused by digestion of devitalized cells of the mucosa. This process continues by digestion and irritation, extending to the muscularis with the formation of fibrous tissue at its margins and base. Peptic ulcer of the duodenum is ten times as frequent as gastric ulcer. Duodenal ulcer is four or five times more frequent in men than in women, and the largest number of cases are found between the ages of thirty and fifty.

The cause of peptic ulcer is unknown. A résumé of the experimental work on ulcer reveals the fact that an acute ulceration of the stomach can occur in a variety of ways. Among the factors which have been given as the cause of ulcer are nervous, acting through the vagus and sympathetic; circulatory; infection, local and general; chemical and metabolic toxins; traumatic; deficiency of antipepsin; and the action of that portion of the stomach called the magenstrasse.

I will discuss some of the most important of these causative factors.

Mann and Williamson produced typical chronic peptic ulcers in experiments on the dog. Surgical duodenal drainage was done by transplanting the common bile duct and pancreatic duct into the ileum, thereby decreasing the alkalinity of the duodenum, and chronic peptic ulcers were produced just distal to the pylorus. Also, by draining the duodenum into the ileum and anastomosing the jejunum to the pylorus, typical chronic peptic ulcers were found just distal to the pylorus. These ulcers healed promptly when the gastrointestinal tract was reëstablished. It is reasonable to infer from these experiments that the alkaline duodenal contents play an important part in the prevention and healing of peptic ulcer.

Rosenow has produced ulcers of the stomach and duodenum in animals by injecting them with streptococci obtained from teeth, tonsils, and ulcers of ulcer patients. His observations on the elective localization of bacteria have been confirmed by Haden, Nakamura, and recently by Nickel and Hufford.

Almost every case of peptic ulcer has a focus or

* Read before the Fayette County Medical Society, June 11, 1928.

foci of infection, and favorable results are obtained by their removal. Foci of infection are usually found in the teeth, tonsils, sinuses, prostate, appendix or other intraabdominal location. Devitalized, röntgenologically negative teeth are a frequent source of infection.

Nervous disturbances, by way of the vagi and sympathetics, causing pylorospasm and hypersecretion, lessen resistance, and ulcer may be produced by the action of bacteria, emboli or toxins. It seems that certain individuals have a tendency to ulcer and may be considered as a favorable soil for the implantation of bacteria.

In regard to the treatment of peptic ulcer, successful treatment, whether medical or surgical, is dependent upon reduction in gastric acidity, the eradication of all foci of infection, and a correction of the mental and physical hygiene of the patient. It is essential to obtain the confidence and coöperation of the patient, and any half-hearted, careless, indifferent method of treatment is to be condemned.

The cause of hyperacidity is a deficiency in the neutralizing process of the duodenal juice, dependent upon normal pyloric action. The closer the ulcer is to the pylorus, the greater the hyperacidity. Ivy has shown a cephalic, gastric, and intestinal phase of gastric secretion; meat extracts and products of protein digestion, when coming in contact with the fundus, are the most stimulating to the acid and pepsin glands. Carlson states there is a continuous gastric secretion, ranging from two to fifty c.c. per hour in normal individuals.

The reduction of hyperacidity or hypersecretion is brought about by diet and the use of alkalies. I shall not discuss the various dietetic treatments for peptic ulcer. A bland diet is essential, and any diet is good that combines with the acid and is of sufficient caloric value. Medical treatment is usually divided into a rest period and an ambulatory period. Beginning treatment, it is advisable to put the patient in bed, make a check on the acid-alkali balance, aspirate the stomach daily and calculate the acidity. Feedings of milk-cream, egg-milk-cream, or cereal mixtures are given often—six or more times a day—and alkalies are given after and between feedings. The rest period and treatment will vary as to the condition and improvement of the patient. Magnesium oxide and calcium carbonate are excellent antacids. Large doses of sodium bicarbonate tend to the production of alkalosis and acid rebound. The ambulatory treatment is continued for six months or longer. The patient is given a suitable bland diet, and milk or milk mixtures can be carried in a thermos bottle and taken between meals. Much food can be given without harm if given frequently. Surgery is often necessary in the treatment of peptic ulcer, but should be regarded as an incident in the cure of the disease. Every borderline case should have the trial of medical treatment. It seems that today there should be more medical surgeons and more surgical medical men. There should be close coöperation between the surgeon and the internist in the preoperative treatment and preparation and in the post-operative treatment of peptic ulcer. Every case of gastric ulcer is potentially malignant, and I doubt that medical treatment should ever be advised. The cases of ulcer coming to operation give an ulcer history averaging ten years preceding, showing carelessness in diagnosis, inadequate treatment, or persistence of the disease. The cases suitable for surgical treatment are usually cases over twenty-five years of age—cases with symptoms of long duration or resistant to medical treatment, cases with callous ulcer or organic obstruction. I will not discuss the complications of ulcer. Among the surgical procedures are: (1) Excision alone, (2) excision with gastro-duodenostomy, (3) gastro-enterostomy with or without excision, (4) partial gastrectomy.

The success of the operation depends greatly upon the skill of the operator, the proper technique, the choice of operation suitable to the case, and the use of proper suture material. Posterior gastro-enterostomy alone gives satisfactory results in eighty-five per cent of cases. The abdomen should be explored for other intraäbdominal lesions at the time of operation.

There is much discussion regarding partial gastrectomy. It is sometimes the operation of choice for recurring ulcer, but it seems to me a very unnecessary procedure for simple duodenal ulcer. If there is a tendency to ulcer, it may occur in the absence of acid; and cases are reported of marginal ulcers occurring after subtotal resection with achylia. Following whatever operation for peptic ulcer, the patient should be under medical supervision and on a suitable diet for a period of from one to two years.

In conclusion, I wish to emphasize the importance of the removal of all foci of infection in the treatment of peptic ulcer. Treatment should be intensive and adequate. Surgery should be regarded as an incident in treatment of ulcer, and there should be close coöperation between the surgeon and internist.

REFERENCES

Rehfuss: *The Diagnosis and Treatment of Diseases of the Stomach*, W. B. Saunders, 1927.
Nelson: *Loose-Leaf Medicine.*

Mayo Clinic Papers: Vols. XVI, XVII, XVIII, XIX.
Levine, Samuel: "Etiology and Pathology of Peptic Ulcer," *Am. Jour. Med. Sc.*, July, 1926.
Ivy, A. C.: "Newer Physiology of the Gastrointestinal Tract," *Am. Jour. Med. Sc.*, April, 1927.
Nickel, A. C., and Hufford, A. R.: "Elective Localization of Streptococci Isolated from Cases of Peptic Ulcer," *Arch. Int. Med.*, February, 1928.
McCarty, W. C.: "Chronic Ulcer and Carcinoma of the Stomach," *Am. Jour. Med. Sc.*, April, 1927.

PROGNOSIS OF MEASLES PARAPLEGIA*

By HAROLD C. MILLER, M.D.
Eglon, W. Va.

Paraplegia as a sequel of measles is, apparently, rare. Two years ago, when confronted with my first cases, I could find nothing in the available literature except Osler's statement: "Paraplegia due to acute myelitis has been described." This, however, was of no value when asked by anxious parents to offer a prognosis in the cases of the afflicted children. Another sentence in the same paragraph from Osler rather confused the issue. He said, "Hemiplegia is a most serious complication; it usually persists." Were the paraplegias going to persist as well? An appeal to my colleagues and a query to the *Journal of the A. M. A.* were alike fruitless. Time alone could answer the question.

Therefore, I want to report the following cases:

Case I.—Nita E., an eight-year-old girl, had a light attack of measles and was up and playing out of doors on the fifth day. But on the morning of the sixth day she was restless and feverish and wanted to stay in bed. By 4 P. M. of this day, June 28, 1926, she was in a restless stupor with occasional muttering. The temperature was 105.1°, pulse 128, and respirations at the unusual rate of 74 with marked irregularity. Earlier in the day there had been incontinence of urine. The coma deepened and the fever continued to rise until at 8 P. M. the temperature was 105.8°. At this time a cathartic which had been given earlier in the day acted several times, but without the patient being conscious of it.

The restlessness increased during the night but the coma did not lighten. She had not voided; the bladder was found full and emptied by catheter. This relieved much of the restlessness. By 10 P. M. of the second day of the coma she was sufficiently conscious to call for and to drink water. The next morning she was fully conscious and complained of pain in back and legs. The temperature had dropped to 99.8° and respirations to 46. She could not void and was catheterized.

On the following day, July 1st, the temperature was normal and respirations so slow and irregular that they could not be rated. She was complaining of frequent desire to urinate, but could not. It was necessary to catheterize daily until July 5th. Both legs were found to be paralyzed and somewhat painful on passive movement. The knee reflexes were entirely absent; plantar reflexes almost so. Pupils were normal in size and reacted normally to light and distance. Kernig's sign was negative and there was at no time opisthotonis. By the end of the week she could move both feet and legs, and in two weeks she began walking with assistance. There was frequency and difficulty of emptying the bladder for about two months, with a gradual return to normal. Two years have elapsed and she is apparently a normal child with no remaining effects of her unusual and seemingly serious illness.

Case II.—Mildred B., aged 13, was seen first on December 21, 1926. There had been a prodromal rash of measles ten days previously. In three days this was followed by a rather severe attack of measles. The patient was still covered with the rash and was quite ill on the above date, and while there had been all along frequency and dysuria, on this day she could not void at all. She complained of pain of distension in bladder region and also pains in both legs. Knee reflexes were entirely absent and the legs were almost incapable of voluntary movement. She could neither walk nor stand. Two pints of urine were obtained by catheter. The next morning at eight the temperature was 102°, pulse 130, respiration 32. The next day the temperature was sub-normal and after this there was no recorded fever. It was necessary to catheterize her twice daily for nine days, at the end of which time she began voiding small amounts frequently.

During this time the pain in legs and feet decreased, but the paralysis increased, and, in addition, she was almost constantly nauseated. Within three weeks she could walk again with little difficulty, but there was still marked frequency and urgency of urination so that her school work was considerably interfered with for about two months. A recent report from her says that she is now in good health with no residual symptoms.

Case III.—Ira L., aged 18, had a severe attack of measles which on about the seventh day was complicated by distension of the bladder and inability to void. There was in this case much general weakness and he complained of backache, but no definite signs of paralysis were made out. On account of the diffi-

---

* Read before the Preston and Monongalia County Medical Societies at Kingwood on July 13, 1928.

cult winter roads I was able to see this patient but once, and for that reason did not catheterize him. The bladder overflowed and within a few days he was apparently able to empty it again. One interesting feature of this case was that within a year there returned very marked frequency, especially at night. No cause could be found for this attack, the urinalysis showing nothing of significance except a very few hyaline casts. It was thought to be a flare-up of the nerve irritation due to the measles myelitis.

These cases have in common a myelitis following measles and with the presenting symptom a bladder paralysis. Two of them in addition presented a definite flaccid paraplegia. Only one showed many symptoms of an associated encephalitis. From the reports of Neal and Applebaum, and later of Musser and Haüser, encephalitis following measles is increasing in recent epidemics. Moreover, their reports would indicate that its prognosis is serious, both as regards life and recovery. Osler had already observed that hemiplagia complicating measles was often fatal or permanent. But, on the other hand, if these three cases are indicative, the favorable outcome of the measles myelitis here reported would seem to point to a more hopeful prognosis in this rarer complication.

THE USE AND ABUSE OF ROENTGEN RAYS IN INFLAMMATORY CONDITIONS *

By ALEX. R. MACKENZIE, M.D.
Huntington, W. Va.

In this era of scientific medicine, we practitioners of medicine, with our exalted ego, have been holding ourselves up as examples of scientific perfection, to the eccentric pseudo-scientific, irregular practitioners who are now legal practitioners in this state. So much has been said against them in the past that I do not purpose to discuss legalized hanging or neck-breaking for supposed cervical slips as a cause and cure for heart trouble, because Dr. E. S. Blaine has so ably done this, in reported cases, confirmed by plates and autopsies, in radiology, or to even discuss electrocution with the x-ray, since Dr. Harold Swanberg has done this, cleverly, in an editorial in the *Radiological Review*, and copied by Dr. C. A. Ray, at my request, in the WEST VIRGINIA MEDICAL JOURNAL, January issue, this year, when our own ranks are filled with the far-reaching individual who does not know his limitations and who is prone to criticize the charlatan.

Only recently I have known of men who did not know the difference between a diathermy and an x-ray apparatus attempting to do x-ray therapy ninety days afterwards. It was not over two weeks ago that an x-ray salesman called me on the 'phone and said he wished I would recommend two good books on x-ray therapy for a friend of his, a former surgeon of a miners' hospital, that wanted to do x-ray therapy. I told him to have his friend read Dr. Swanberg's editorial. He replied that this doctor had boasted that he had done x-ray work for twenty years and probably would not consider himself in that class. I told him then it would not be showing good taste for me to suggest any book for the doctor, as he was probably more familiar with the literature than I, and because an individual desired to scientifically commit a crime was no reason why I should knowingly become an accessory to the act.

Then there is the physician and surgeon with no knowledge of the principles of röntgen rays who permit a lay technician or nurse, or any one else who knows less, deluded, thinking they know more, do their x-ray work for them; yet this same doctor howls and talks gibingly about the potential murderer, the drunken driver that kills a child, or the fool that tries to bake dynamite in the kitchen oven when it was intended for some other purpose. Why should they care because x-ray therapy is x-ray therapy, and a Wasserman is a Wasserman, no matter if it is done by a plumber, electrician, or moulder. We were responsible for patent medicines and all the irregular practitioners, and, not content, we are deliberately responsible for the commercial x-ray laboratories and electrical quacks. The innocent victim is placed under the high-powered röntgen ray tube, told to hold still and fear no danger as nothing will hurt him, and this mysterious ray will bring him back to health again. Button number one, two or three is pressed—"Let me see; is that right? That x-ray salesman told me so last week—yes, that's right; here it is on the chart he gave me. No difference whether the patient is left under one minute or an hour; that will be all right. I am a very busy man; I will write some letters while the patient is receiving the treatment. What difference will it make if the filter is left out (I read somewhere that they used unfiltered rays), or what spark gap is used or dose given, so long as I can get a fee for doing it? Because all röntgenologists make big money, why

* Read before the Cabell County Medical Society, March 8, 1928

send a case to them and let them get this patient's cash, when I can take it in on the side, and, as a matter of fact, I feel that I can do it so much better myself." Is there any other reason that I may have left out that is the cause for so much charlatanism in this field of medicine? Is there any other reason why so valuable a therapeutic agent as the röntgen ray has not reached its peak of usefulness it rightly deserves and still remains in its infancy?

The only resistance we are compelled to meet has been caused by our own profession putting out to the laymen ugly propaganda, for the most part based on ignorance, and to meet this resistance the average röntgenologist is forced to be, at times, overly enthusiastic, and this enthusiasm has also done additional harm.

A great deal of good could be done by placing medical röntgenologists in charge of laboratories, with more friendly coöperation on the part of the clinicians, at the same time making an effort to protect our own profession, appreciating the ability of a trained physician first before a poorly trained lay technician, with his usual limited ability and with no sense of responsibility to the patient or referring physician.

Röntgen ray therapy can be placed on a higher plane, with a definite benefit to both the patient and the physician.

Every progressive, up-to-date hospital in the world has a medical röntgenologist in charge of the laboratory. In Huntington, only one hospital has a medical röntgenologist in charge, and he is without a technician. From what I can learn, there is not one technician in Huntington registered. That is a good way to train them to later conduct commercial laboratories of their own.

I hope what I have said will be accepted as constructive criticism. Because anything that has been so badly abused does not necessarily forbid its use. Just because we are behind and below the standard in our methods, should we continue to be?

It is not my intention to bring to your attention any therapeutic agent as a cure-all. To even attempt to do it would be to make myself ridiculous; but with the use of the röntgen ray we have a powerful physical chemical agent, capable of both splitting and synthetizing chemical compounds, and which also applies to the animal cell and tissues, the chemistry of which is too complex, technical and lengthy to be incorporated in a paper of this type. As to the measurement of dosage, it has been, in the past, clinically satisfactory when intelligently used; but a combined effort is now being made for standardization of dosage from a physical electrical standpoint, to standardize dosimeters and ionization chambers so that one common standard can be used and placed with the Department of Standards at Washington, for comparative dosage. It is to be regretted that, up to now, there has been a marked disagreement between the French, German, and American units of röntgen ray intensity. While this standardization may be ideal from a physical standpoint, the patient and the reactions of tissues is the all-important equation.

I will attempt to mention the observations of other observers and their results, as well as the results from my own study.

Inflammatory Conditions of the Skin

Since eczema is not a distinct pathological entity, it is rather a group of symptoms in the skin which can be produced by innumerable causes, and which consists of numerous complex clinical manifestations, and, naturally, a disease which is often obscure in origin will have an unlimited number of remedies. They are selected to remove the causes, to cure the complications, to relieve the distressing itching, burning and pain, and to hasten the absorption of infiltration and restore the indurated tissue to a normal soft condition.

The x-ray, while it has been conceded to be the most useful single agent, and while of value and indicated in most cases, it should not be used to the exclusion of other remedies, such as may be selected to remove the cause, for it may prove disappointing and throw a valuable agent into disrepute. In erysipelas it has also proven its value in my hands. The serious relapsing types are followed by a rapid subsidance of the process. Also, in the recurrent forms in has been definitely beneficial, promptly softening up the thickened skin and subcutaneous tissue and preventing recurrences. I have a large number of three- and four-year cures of trichophytosis without recurrence, and which were proved with scrapings, while Dr. Reudemann was associated with us. This type of infection has, at times, been very resistant.

Acne, alone or associated with other inflammatory conditions of the skin—I have had seventy-eight cases, with only three or four failures, the failures not due to the treatment but to failure to coöperate and return, on the advice of some kind friend. If the patient will take his full course of treatments, he will not, in my experience, have any recurrence.

Ringworm, with inflammatory changes, responds equally as well but more promptly.

I have never treated lupus vulgaris. On the advice of two authorities in dermatology, and from reports, this class of case is better treated with the Finsen concentrated arc light, using the double quartz condenser, with cooling chamber between, and then only by one experienced in its use. This same light offers more for x-ray dermatitis than any other form of treatment. My best results have been with filtered irradiation, and there is a tendency for every one to lean to the filtered ray.

I believe it may safely be said that the general introduction of filters in connection with röntgen radiation has made the occurrences of so-called röntgen-ray burns, both slight and severe ones, a good deal more rare, or, at least, relatively more rare, considering the more enormously vast extent to which that therapy is now being used. But, on the other hand, the cases of cutaneous atrophy have been more frequent. The reason of this is, undoubtedly, to be found in that fact that while the filtration enables us to avoid the severe burns much better than before, my firm belief is that this same filtration will incidentally secure us against all and any accident to the skin; provided, only, we take care to watch the dosage properly, has been disappointing, owing to the fact that cutaneous alterations resulting from treatments by filtered rays, in many cases, do not set in until a long while afterward.

I do not feel that Hodgkin's disease comes within the scope of this paper. Various types of chronic ulcers, including the tuberculous ulcer, yield rapidly to treatment, especially if the ulcer is painted with eosin or solution of iodine, which seems to increase the absorptive power of the rays, and I have had ulcers treated in this way yield when they were refractory to radiation alone. The treatment of carbuncles and boils has been so thoroughly covered by Hodges, Richards and Lewis, and others, that I will not elaborate on this, except to mention that in thirty cases of boils, carbuncles and subacute infections treated by me, all of which showed more or less cellulitis, and in only one or two exceptions have we felt there was not a distinct improvement which would not have been expected in the course of infection when treated in the usual manner. It was manifested in shortening materially the period of infection, almost invariable relief from pain, and the establishment of drainage through preliminary incisions, and patients themselves bear witness to it that the method was an improvement over the older methods in use. Added to this, it is less scarring, even if an incision has been or is to be made. The dosage and filtration with or without is varied, depending on the depth of induration.

Ewing states that it is his belief that radiation increases the permeability of the cell membranes. There are also vascular changes, according to him, consisting of hyperemia, with vasodilation and the exudation of serum and leukocytes, and, on clinical observation, it is believed that the increased drainage noted almost invariably is dependent upon the vascular change, and that the good results obtained are due to two factors: The first is hyperemia induced in the part exposed by increasing the permeability of the capillaries; secondary to this, there is a lavage of the infected part, which carries away with it much of the toxic material. Added to this is a protein split that probably acts as an antibody, antitoxic in its action.

While the röntgen ray has a very limited field in inflammatory diseases of the eye, Dr. I. C. Samuels, after having his own results duplicated by the work of other röntgenologists, has found that the x-ray has a field for usefulness and is valuable in the treatment of exudative iritis, which is a stubborn and difficult condition. They do not claim that all cases will yield to it, nor that it is the only satisfactory treatment, but it is their belief that it will greatly hasten the recovery of a great many cases. I have never had the opportunity to use it.

Post-operative treatment of mastoids which fail to heal, especially when there are infected glands in the neck, is of value. While my results have been good, these cases probably would do better under zinc galvanism of the local wound, and the glands treated with röntgen rays. All forms of infected and hyperplastic glands yield promptly to radiation. Those due to infection not tuberculous or parasitic in origin yield to one or two doses. A much larger dose can be given, penetration being equal, because a breaking down is not as important as in the tuberculous type, except where drainage is instituted, and for cosmetic reasons only.

In the tuberculous type I have used much smaller doses and longer intervals. Repeated warnings have been issued by röntgenologists that too large dosage will have a tendency to break down the natural barriers that have already been formed. It has been found that V. Pirquet negative patients, after having been given small doses, will be V. Pirquet positive,

and the treatment has been looked upon by a few as a probable method in setting up an immunity.

Those that I have treated improved clinically from the start, but a greater number of treatments were given to establish a complete retrogression. I have never used it in actinomycosis, but reports are similar that this is also a very resistant type of infection. In peritracheal, mediastinal, peribronchial, also the enlarged glands in the hilum, as a result of upper respiratory infections or as a result of different infectious diseases, whooping cough, influenza, etc., when all other measures have been used and upper respiratory foci removed and yet do not respond, the röntgen ray has proved in my hands a useful adjunct and the results are nearly always prompt, even in chronic bronchitis with occasional attacks of asthma, or true asthma with occasional attacks of bronchitis, with large radiation fields and small doses. While I have had results only in a small number of cases (ten), good results were obtained except in one or two cases where it was impossible to eradicate the infection in sinuses or where patients refused another operation. I am speaking of cases that, after the upper respiratory infection was removed, still had asthma, getting only temporary relief from usual measures employed.

In this, as in eczema, I do not mean to say that x-ray should be used alone, to the exclusion of all other methods. Gilbert Scott, London Hospital, and others have also reported encouraging results.

It is a useful adjunct in treatment of infected hyperplastic tissue.

A few years ago, to satisfy my curiosity, I treated all types, but my results on the whole were disappointing and I was never able to duplicate the observations as reported by W. D. Witherbee. I varied my technique, using the same, smaller and larger doses as recommended by him, and was always careful to see that my central rays were directed behind the angle of the jaw.

I still believe, however, that as a preoperative measure in certain cases, and likewise as a postoperative measure in cases that have a tendency to recur after having had one or two tonsillectomies, catarrhal deafness, if not of too long duration, and in a large number of cases after tonsillectomy where the angina is as severe as before, in the aged, or where there is some legitimate reason or contraindication for operation, or where a temporary measure is indicated Hickey and others have shown with throat cultures, before and after irradiation, that in diphtheria carriers the bacilli were eliminated in two to four days after a fractional dose of x-ray. These results were obtained in 80 per cent of the cases treated. This observation is deserving of consideration.

Large fistula has been disappointing to me, although good results are continually reported. Here, surgery is the method of choice, but galvanism should be considered in some cases.

Holzknecht and others report good results in certain types of pelvic infections of the fallopian tubes, etc., that have not gone on to pus formation, but I am not familiar with this and have not treated any such cases.

Chronic mastitis, when the usual routine treatment has failed, will usually yield in two to three sub-intensive doses.

During the acute stages of arthritis, diathermy offers more than x-ray, but when fibrosis has developed, röntgen-ray treatment has given me brilliant results. In five cases of fibrinous ankylosis of the jaw, one case of three years' duration, with locked jaws, there was a complete disappearance of the fibrinous tissue, with complete restoration of function, after surgical intervention a number of times had failed. This is contrary to the usual belief that the röntgen ray always produces fibrosis, and which has been broadcasted by a great many, especially surgeons and men of reputation, but their contentions are not based on facts, because, if it occurred to the extent that they would have us believe, we probably could cure practically every case of malignancy.

In ulcers and skin cancers that have been treated with the x-rays, it is surprising the small amount of scar tissue that remains. If it was true, why do nearly all keloids melt down promptly under its use?

SOME POINTS IN THE DIAGNOSIS AND TREATMENT OF TOXIC GOITER *

By A. A. MILBURN, M.D.
Beckley, W. Va.

In choosing a subject I decided upon one that I thought would be of like interest to both the physician and the surgeon. What I have to say is in no way original, but perhaps will bring to mind some of the things which we are all too prone to forget while overburdened with the routine matters of general medicine. Most papers I have heard read before medical societies contain only rehashed and

* Read before the Mercer County Medical Society at Princeton, West Virginia, September 27, 1928.

revamped ideas, not those of the writer but of some one else, gleaned from another medical meeting or from a journal or textbook. The views expressed are some one's else, and all that gives any interest to the paper is borrowed plunder. My paper is not an exception to this time-honored custom.

The thyroid gland, no doubt, is one of the main governors of the complex physical and mental make-up which shapes the destiny of the whole human life. It superintends body growth, stimulates the mental processes, and probably holds the power to determine whether its possessor is to be a genius or an inefficient laborer carrying out less noble duties. It furnishes the stimulus to the little understood metabolic processes, and its dysfunction in early life may result in the cretin doomed to an early death and in later life to the nervous, dissipated, wasting individual for whose aid we are so commonly appealed to. The gland has also been shown to be so intimately connected with the sexual economy that it presides to more or less extent over menstruation, parturition, and sexual desire. Truly, gentlemen, it is a little gland of wonderful potentialities.

Contrary to the pet ideas and theories of many men, we are still at a loss as to the exact etiology of this disease. Some hold the opinion that it is a direct infection of the thyroid gland by bacteria, while others consider it a toxemia resulting from the already overworked theory of focal infection in some other more remote part of the body. Neither of these theories yet can be proved or disproved, so it makes little difference to which one we adhere. It is observed, however, that goiter is often first noted in its incipiency just after an attack of influenza or some other constitutional disease. Whether this is due to a toxemia, the result of a lowered vitality during convalescence, inherited predisposition, or what not, can not be determined. Due to the fact that goiter is so much more prevalent in women, we also have to think that in some cases it is closely related to or is the resultant imbalance caused by destructive disease processes in another gland somewhere in the sexual and endocrine systems. The geographical distribution of the disease from the standpoint of etiology still bears up another phase and brings in the old, original iodine deficiency theory which still enjoys its many supporters. No doubt there is a very close relation between iodine and adolescent goiter, as this has been proven by the administration of iodine salts to large numbers of school children; but as to its preventative or curative power in the goiter of adults there are still many points in dispute. In spite of all the extensive research during the past few years, the real physiological and chemical processes are not understood.

No perfect classification of goiter has as yet been evolved. The surgeon has one classification, the clinician another, and the pathologist makes up another classification to conform to the microscopic appearance of a section or parts of a section of the removed gland. We have to diagnose and carry on treatment and then classify according to the results of our administrations and pathological findings.

To form a working basis for the whole medical profession, goiters may be divided roughly into four great types: the colloid, adenomatous goiter without hyperthyroidism, the toxic adenomatous goiter, and the exophthalmic.

The colloid goiters are seen in young girls from puberty to about the age of twenty. They are soft, symmetrical in shape, and progressively increase in size. The acini of the gland are filled with an excessive amount of colloid material. If these cases do show symptoms they are usually attributed to sexual or nervous disturbances *per se* and not to the thyroid glands. This type of goiter can be prevented by the judicious use of iodine and thyroid extract. However, supervision of the child's work, modification of study hours, regulation of social pleasures, and a few simple hygienic measures, and most of these patients will recover regardless of any other treatment.

Adenomatous goiters without hyperthyroidism usually begin early in life. At first they are symmetrical in shape, due to a general parenchymatous hypertrophy. As they progress they tend to become asymmetrical, due to the irregular development of cysts or adenomas. This type of goiter does not produce constitutional symptoms, but if they grow large enough they may produce pressure symptoms and cause marked deformities. About eighty per cent of this type, after a period of a few years, ultimately undergo degenerative changes and become toxic goiters. These cases should be watched carefully by the medical man and iodine should be administered very carefully if at all. Operations are indicated in this type to relieve local symptoms and to prevent the possibility of hyperthyroidism and malignant degeneration.

Toxic adenomatous goiters develop in patients who have had simple adenomatous goiter for many years. They are much more common in women than in men, and the patients are ten to fifteen years older than in the exophthalmic cases. This type of

goiter is a real constitutional disease. The gland is symmetrically enlarged. These patients have nervousness, tachycardia, develop coarse tremors of the fingers, and show a rapid loss of strength and weight. The basal metabolic rate is increased early in the disease and, untreated, continues to be elevated. This disease does not have remissions of symptoms like exophthalmic goiter, but progressively becomes worse, setting up secondary degenerative changes in the heart, liver, kidneys, and other vital organs. If these patients are operated on early, they are usually restored to health, but if operation is postponed until late in the disease the organic changes that have taken place throughout the body are too extensive to be restored to normality even after the exciting cause has been removed. It is probably due to this fact that thyroid surgery fell into disrepute not so many years ago.

The exophthalmic goiter is symmetrically enlarged and there is a cellular hyperplasia resulting in the destruction of the colloid material. This type of goiter is usually seen in younger patients, and the onset of symptoms is more sudden and of greater intensity than in the toxic adenomas. Its essential cause is even more unsettled than that of any of the other types of goiter. It is often found, after taking a careful history, to follow some acute disease, emotional disturbances, worry, or sudden shock. The lack of iodine does not seem to play an important part in its etiology, for it is almost as prevalent in one part of the country as in another. The symptoms of both the toxic adenomatous and exophthalmic goiters are in a general way the same, with the exception of the characteristic eye changes and usually a higher metabolic rate in the latter. For a clearer differentiation of these two types of goiter we are indebted to the studies of Henry S. Plummer of The Mayo Clinic. Before his hypothesis it was rather generally believed that exophthalmic goiter developed either from a simple goiter or was a more advanced stage of toxic adenoma.

The diagnosis of well-advanced toxic adenomatous or exophthalmic goiter is not difficult after a careful study of the patient. However, the borderline cases are the ones that present the most difficulty and should be carefully observed and put on an expectant line of treatment and radical procedures skillfullly neglected until a positive diagnosis can be determined.

Patients suffering with hyperthyroidism are usually complaining of a multitude of symptoms before they seek the advice of a physician. Many of the symptoms are not reliable and may be common to any of a number of diseases. Nervous breakdowns, headaches, hot flushes, insomnia, occasional spells of palpitation, dyspnea, and indigestion are most apparent to the patient. However, a positive diagnosis depends on all or some combination of the following, namely: nervousness, tremors, loss of weight, tachycardia, exophthalmos, goiter, and increased basal metabolic rate.

The nervous manifestations are many and varied. The patients are restless and irritable. They can no longer read or converse coherently, and often describe themselves as being under a constant strain or tension. Insomnia is often an outstanding symptom, but, of all the nervous symptoms, tremor is frequently the most conspicuous. The patient is easily confused and can not execute fine movements such as writing, sewing, and eating. In addition to the tremor of the hands and knees, the patients often describe a trembling and shaky feeling inside of them. All these nervous complaints are conclusive, but in some cases basal metabolism tests differentiate a true hyperthyroidism from an autonomic imbalance from some cause other than the thyroid gland.

The loss of weight is rather constant and definite, but this can not be considered seriously unless it is at least a five per cent decrease in the normal body weight during an interval not greater than six months.

Tachycardia is the one symptom which occurs with the greatest frequency. With the patient at absolute rest, a pulse rate constantly above ninety or more to the minute is very significant.

Exophthalmos, especially a mild degree, often exists without the patient being aware of it. The subjective symptoms are usually burning, irritation, and photophobia. If the exophthalmos is very marked it is easily distinguished from normally prominent eyes. There is a widening of the palpebral fissures, lagging of the upper lids, and failure to converge for near vision.

The presence of goiter in conjunction with two of the above symptoms is confirmatory but must not be confused with a natural prominence due to thin necks and loss of weight from other causes. A relatively small percentage of patients have noted the simultaneous appearance of their symptoms with the appearance of goiter. These patients, as a rule, have exophthalmic goiter. The adenomatous goiter is usually larger and nodular, while the exophthalmic type is small and firm. It is always wise to consider observations of the patient's relatives or friends in

regard to any noticeable increase in the fullness of the neck.

The recent use of the basal metabolism test has given us a valuable aid in the determination of thyroid activity, but it should be looked upon as confirmatory of clinical study and to rule out a hyperactive thyroid gland rather than to rule it in. Practically all the factors such as body temperature, muscular effort, mental state, barometric pressure, body surface and the caloric value of oxygen can only be approximated. Consequently, the reading obtained should be considered only as an approximate and not taken literally as a definite figure as it is expressed. Too, the experience and the skill of the technician making the report must be considered in a light other than his mathematical accuracy in counting the rate. The most frequent errors in basal metabolic tests are the too high rates because the scale of abnormal range is greater on the plus side. Therefore, the finding of a low rate in a person suspected of having hyperthyroidism practically rules that condition out, while finding an elevated rate does not necessarily rule it in. As the test is done by the average technician, the rate is probably never too low.

A tentative diagnosis of toxic goiter should be made in the very early stages of the disease, but a positive diagnosis and surgical treatment should be delayed until the patient has the disease in an unmistakable form. If this idea be kept in view and medical treatment started early, many cases would probably be arrested and never would progress to the point where radical therapeutic measures would have to be resorted to.

As the interest in treatment of goiter is largely confined to the toxic adenomatous goiter and exophthalmic types, the first two will be purposely omitted.

It is now more generally conceded by the best goiter men that the greatest benefit to patients suffering from toxic goiter comes from the surgical removal of the major portion of the thyroid gland. Administration of iodine, x-ray therapy, temporary ligations, partial destruction of the thyroid gland by chemical means, and various other procedures tried from time to time have their place and probably have benefited many cases. However, practically all of these cases finally come to a surgical operation and many of them in such a condition that surgery is attended with greater risks than if they had come earlier.

Many men advocate a period of non-surgical treatment and the removal of all foci of infection before any surgical measures are instituted. This is very logical reasoning, but it is my opinion that if a patient has a moderate or severe exophthalmic goiter it is best to operate and relieve the immediate symptoms and clear up these foci later on general principles.

The use of iodine at one time was largely restricted to the medical treatment, but during the past few years it has been proven to be of only temporary benefit and, its effect once secured, the beneficial results could not be so readily obtained should the occasion arise later. Now it is conceded that it is best to use it only as one of the major preoperative procedures to cause a remission of symptoms. No doubt it has played a very important part in reducing surgical mortality. Its best results are obtained in the exophthalmic type, but it probably does no harm if administered for only a short time in the toxic adenomatous goiter. There is always the possibility of a mixed type of gland, and its use in a nodular goiter with a doubtful diagnosis of exophthalmos does not seem to be unwarranted. It is administered in the form of Lugol's solution in doses from twenty to forty drops per day over a period of from eight to ten days, depending on the degree of hyperthyroidism. Its maximum effect is usually secured in this length of time.

Many other preoperative measures are essential before operation is performed, if the mortality is to be kept at a minimum. The patient should be confined to the hospital and kept in bed, at absolute rest, and all excitement and irritation avoided. Any cause of worry should be corrected, if possible. Sufficient sedatives should be given to secure long hours of sleep. A high caloric diet should be allowed to equalize the increased metabolism, but not in such large quantities as to cause digestive disturbances. Water should be forced and elimination should be secured by laxatives, if necessary, to eliminate toxic products. An ice-bag to the precordium and the use of digitalis in the arrhythmias and decompensation of advanced cases will greatly add to the comfort of the patient and will reduce the symptoms of a very dangerous case to a fair surgical risk.

The technique of the operation is too long to be discussed in this paper. The particular operation most familiar to the surgeon is the best one. The main object is to remove enough of the gland, and if the results are not prompt and permanent it is because the operation has been delayed until the

symptoms are no longer due to the original hyperthyroidism but to the damage done to the vital organs as well.

THE SCHOOL OF MEDICINE IN THE DEVELOPMENT OF THE STATE OF WEST VIRGINIA

By HARRY M. HALL, M.D.
President, West Virginia State Medical Association
Wheeling, W. Va.

We are here today to welcome and inaugurate a new president of the West Virginia University of the State of West Virginia. The writer does not know how this function affects the remainder of you, but as to him, in some unseen, silent and yet altogether poignant way it carries a feeling that in some manner new things are going to happen; new ideas are going to be born; ambitions realized; ideals become realities; inhibitions dazzle into performances; and the State of West Virginia takes its place among its sister states as one of the localities where not only an education but a finished education can be had in any of the major branches of activity of the world today.

These are not mere words. They are not a lot of phrases thrown together to make a university holiday. They do not represent a few coined expressions that will do to gently greet the exigencies of the occasion. No. That has been done too often. We are here today with something of the seriousness of the Boston Tea Party, bent not on throwing a consignment of leaves into the sea but to discard a cargo of inertia that too long has proven a stale and unprofitable condition.

One does not know why—one simply realizes that for some reason or other West Virginia has not played up to its educational possibilities. We have put our faith in coal, iron, timber, and oil, not to speak of manufacturing and agriculture, and expected them to carry West Virginia to the world on the flying banners of prosperity. They have not failed, of course, but the net results of their caravan have not always come back to citizens within the borders of the state. Nor can man live by bread alone.

We have in some queer manner felt shy about our educational side. We have behaved like wallflowers at some terpsichorean festival. Seemingly we have taken sidelong glances at Massachusetts, Connecticut, New York, Pennsylvania, Virginia, Ohio, Illinois, and others, and, realizing the perspective of their great universities carrying ponderous endowments, we have felt, "What is the use of attaining any such bright, scintillant places of glory as they with their flowing gold can occupy, when we can't by any chance obtain the costly equipment they so handsomely hold?" Naturally, our youths will stream to those cynosures with the marks of pride and the badges of attainment their venerable names bestow.

But why not look the other way? There is Wisconsin. Located in cold climate, largely agricultural. Population somewhat foreign. Situated next to Chicago and Illinois with their large colleges, many of which have all the wealth they will ever need. Yet out of that university have come ideas that have shaped a thousand educational courses, particularly in medicine.

Minnesota — geographically misplaced, if that made any difference. The writer has just returned from there. Always, everywhere, education is first. In a prospectus of the city of Rochester the mark of emphasis is placed on the millions they have in their city schools—and they have good ones. Next they talk of their agriculture and their manufacturing, but always, everywhere, is that idea that first, last and always the hope of the world is a good education and as much of it and as finished as is possible. The Minnesotians are a virile band. They believe in themselves. So much so that, some years back, two surgeons with great confidence in the power of information and ideas, their state, and in themselves, conceived the notion of taking their small town, in as out-of-the-way a part of the state as White Sulphur Springs or Gassaway would be geographically from the main cities of this state, and there associated themselves with a small hospital—St. Marys. Today, people come from all over *to learn*. Their ways are copied everywhere. Their methods utilized, their standards accepted, their words given credence in all the cities, towns and hamlets where the English language is spoken. When they go abroad and their names occupy a place on the program of any gathering, you will find a large, attentive audience, drawn there because words of wisdom and practicability will surely be spoken.

Even in Utah, mention of which brings to your mind a sparsely settled state of limited opportunities, there is a university with a medical college that has so good a course you will find, if you try to enter, that its fame has brought to it so many applicants, even from the east, that admittance will in all likelihood be refused you.

What makes for excellence? The spirit in the institution and with those who support the institution. What makes for this spirit? The virility of outlook of its president. The blessed power of direction and vision, of understanding and sympathy, of an inherent belief in himself first and of his university second, which wills him to know in the very start that the people of this state are no different from those of Wisconsin or Minnesota or Utah in their desires for great things, and that when it is properly presented to them and they see their sons and daughters coming home in the last days of their sojourn in this university, as proud of their diplomas as if they were gained at any seat of learning the country over, be it medicine, law or agriculture, then—and then alone—will there be a mighty, irresistible surge to place this institution so that when one says "West Virginia" it will mean in the minds of the rest of the country what Athens meant to the Greeks. Our roads have made our scenery second to none. We feel the advent of our new president will mean a university second to none.

So that brings us to our medical college. It would be idle to say there are not mixed feelings about this medical course, and it would be far from the truth to say the opposition is not earnest, sincere, and patriotic so far as this state is concerned. And yet this writer, speaking for himself alone and well aware he will be taken to task for it, affirms boldly the opposition to a four-year medical course comes from nothing more or less than timidity. The very wallflower spirit heretofore mentioned in this article. A finished medical course is a big undertaking and requires a number of procedures differing from any other possible collegiate course imaginable. To the timid, to the conservative, to the "hard-headed" business person, to the "let good enough alone" contingent, to the geographically minded taxpayer, to those without that sterling quality "state confidence," there would naturally seem to be a number of almost insurmountable obstacles. The answer is, "There are obstacles"—some pretty big but not too big for women and men from the mountains and hills whoever in the world's history have conquered all obstacles.

This full-term medical course has the support of the West Virginia State Medical Association. There was a time when this was not so buoyant nor so strong, back in 1910 when the course was abolished and the work was offered in the Arts and Sciences college. This gave it no standing. The West Virginia State Medical Association came back, demanding its due and that medical education be continued and with proper support and rank, and in 1913 it was reëstablished as the School of Medicine. The writer has always regretted that the full four years was not put in effect then, but, doubtless, that lack of belief in the sturdiness of the following mitigated the zeal of those who were trying for the best they could obtain. It is at this point a very important and a very pertinent fact must be given. A school of medicine is not primarily an institution for turning out a log of graduate men who will make money by treating the ill. This idea has long since been laid away in the trunk in the garret, never to return. A school of medicine is primarily an institution to help people from becoming ill, and a little thought will readily discover this to be a truism.

A good medical school is always a research laboratory—something this state lacks, to its very great disadvantage. A research laboratory means discovery. Discovery means understanding. Understanding means prevention. Each state has its own peculiar problems of prevention—and they must be worked out in conjunction with a wise and capable state board of health. West Virginia can not much longer remain a first-class state without such a place of research and discovery. It is downright pathetic and altogether pitiful to see Dean Simpson and his limited cohorts striving to attain some very admirable endeavors in the present quarters to which such work is allotted. It simply can not be done. Well, it must be done if we are to remain a leading state of this great United States. Because, right now, whether you believe it or not, all human activity finally rests on medicine—part of which is curative, but which, as the days go by, must be largely preventative. It is rather trite, and certainly a well-worn gesture, to bring up the Panama Canal, but it serves quickly to give the point of view. No Gorgas, no canal. What is the matter with the most of Africa? Heat? Christian Scientists? No! The medical profession. South America. Yes. Hither goes our President-elect. But there are places he will not stop, and why? Ferocious beasts? Not at all. Virulent microörganisms. Yet there are places he can go that, once upon a time, he could not. Why? Reptiles. Thanks to the medical profession, who discovered a serum, if he is bitten the remedy is at hand. How procured? A research laboratory subsidized by the state makes it possible.

What is a coal mine or lumber camp able to do in this state if it has infected water? What can a carbon plant do if typhoid continually attacks its

workers? Who wants to work for the Wheeling Steel Corporation if the towns it is located in have no full-time health officer? What desirable citizen from another state would want to move into ours if his children of a school age have not the benefit of school nursing and inspection? Who wants to live where a good hospital is not near at hand?

It is quite absurd to expect enlightened men and women, such as every community wants and craves, to live in such a place without a physician and surgeon of known ability within convenient calling distance. They will not do it, and all argument to the contrary will not alter the stubborn facts. Not only that, but every big corporation in this state sees to it that it has a medical man among its employees, if it happens to be located in a remote region. They do not import a lawyer nor a minister nor any other professional save an engineer and a doctor. Both are necessities. So all industry, all commerce, all effort, agricultural, civic or progressive, all manufacturing, all modern projection, require medicine, curative or preventative. It is the rock on which all else swings. As a matter of fact, the religion of Christ has as its distinguishing feature the care of the weak, the crippled, the downtrodden and the ill. Wherever it has gone it has appealed to the so-called non-christians for its hospitals and its care of the diseases they have and the prevention of others. Your successful missionary has always been a medical man.

All this has been given for one reason: to show conclusively that medicine is not one of the commor stones of the building but is, in reality, the cornerstone of modern life. Of what use is a lawyer with yellow fever? How can a priest preach with diseased tonsils and a failing heart? The great financier must give up all his directorates as a cardiorenal complex overtakes him. The greatest question we have today is how to conserve the health of our presidents as well as that of our other public men. Few have ever needed their secret service men. All have felt the helping hand of their medical advisors. The King of England lies ill today. All Britain does not look to its great political advisors—it looks to a small band of medical men to save it from an event the meaning of which none can foretell. The State of West Virginia is no exception. How could it be? Today it is dependent on other states for its source of supply of physicians, and the writer wants to say here and now that each state is carefully looking after its own supply with more alertness than the average citizen ever suspects. Pennsylvania has at present a rather insular system by which its own medical graduates are quite likely to stay within its borders.

The question at once is asked, "Will the graduates of this school stay within its borders?" The answer is not a medical one at all. The medical profession does its part when it backs a school which will turn out finished men. The state has done its part, too, when it provides the school. All over the country it has been discovered that the answer to the above is civic, not medical. So that you will find in many parts of the country chambers of commerce and like bodies going together, advertising for good medical men, and in some localities guaranteeing them a reasonable income. If you have a backward community with no roads, no civic pride, not a single quality in your locality, it is quite evident you have not a medical but a civic question. A grocer buys a stock and puts it on his shelves. He profits on what he takes in on his investment, but he can move into any town and do this business because time has nothing to do with it. It is his stock.

A medical man moves into your locality with a prospect of twenty-five active years ahead of him and back of him all his youth gone, and part of his attainment of manhood—and a tremendous debt for education, and a striking loss of time—and *nothing*. Since this is so, it is to be asked why should he go into a community with practically no outlook in industry or civic pride? No one else would do it except a religious missionary, and his way is usually paid. If any town in this state or any other state is without a doctor it is the town's fault, not the medical profession's nor the medical college of that state. Where a town is too small to support a good doctor, all they have to do is build a good road to where one is—the automobile will do the rest. When you see them bringing the afflicted from everywhere into Rochester, Minnesota, you know that any good-sized town—and Rochester is still merely a town—can form a nucleus for its nearby villages for the treatment of much of what attacks the human body. The acute diseases and childbirth are different, but none should be too far away from any point in this state where a good road would not answer the human needs of childbirth, accidents, and acute diseases. Therefore, it does not seem a good argument to say the graduate of a full-term medical school would not stay within the state. They will stay if it is reasonably attractive. They will not stay either in West Virginia or any other place if there are no prospects of standard living, and if not

a standard living a sufficient competence to offset the deficiencies. Why should they do it? Surely, West Virginia is as attractive as any other state and just as inviting. To argue they will leave the state is to indict it as lacking in the attributes of standardized living. We all know there are localities in every state which are rather barren and far from presenting modern life in its best aspects. In every such place there is a center, and that center must be made into a livable community. Furthermore, if any such place wants to move up in the scale, let them obtain first a good physician and the other refinements will be added unto them.

Where would the clinical material come from to fill the hospital for a medical college in Morgantown? Has Morgantown stopped growing? Has it reached its maximum? Just because coal is not quite the source of wealth it once was, does that mean that all this vast, populous district around the city is about to pick up its tents and silently move away?

The idea advanced by both Dr. Robert Reed and Jerry Simpson is well worth considering. It proposes to send the indigent sick to a large hospital in Morgantown, as it is done with the other charges in the state who are sent to given institutions. This would not necessarily include the mental cases, the tuberculous, or acute and contagious diseases. It would present an array of material second to none in the country. That it is not tried elsewhere means nothing, as it is time we originate some new ideas of our own in this state. A student can study but a limited number of cases, anyway, and what he would see in Morgantown would be what he would come across daily in other parts of the state. We see, then:, that these two barriers are a question of vigor and determination. Other states have had worse and surmounted them. It is about time we take the coat-of-arms of our state and live up to it, showing that while we may be on the borderline of the new South that is awakening we are to be included so far as medical education goes. If we put it off much longer it will be too late. Let us go on with our new president to make our medical college the equal of any to be found in the country.

How will it affect the physicians and surgeons here in Morgantown? It has made no difference as far as this writer could observe anywhere else, so it should not do so here. In fact, if the local men keep abreast of the high standards of a good medical college—and they are close at hand to do it—it should increase their professional scope in every way.

The medical school will include dentistry. After all, in the new light of things, with the teeth in the rôle they now play in disease, a dentist is as much a medical specialist as a nose-and-throat or eye man. It merely happens to be in front of the tonsils that a dentist works. It is really a branch of orthopedics, is it not? It will call for little additional effort to include dentistry.

Two other branches are to be considered as having a relation to medicine. Pharmacy. This is already on a firm footing as one of the best in the country.

A school for executive training in nursing, such as is now given in the Western Reserve University at Cleveland, Ohio. Students pay tuition and are graduated with the other professions at the commencement exercises. They are fitted to go out in executive capacity. We are all perfectly familiar with the fact that the supply is not equal to the demand for such a professional, and that the running and conduct of many a good hospital suffers for want of a good head. Such a course includes public health nursing, dietetic proficiency, and while the period is usually five years, the women so graduated have bachelors' degrees.

So, finally, we come to the needs for more physicians. These are rather obvious.

Among the physicians of the state are numbered many old men who must soon retire. More and more will every locality find it necessary to have a full-time health officer.

More and more will every big corporation find it convenient to have a medical advisor. The medical profession will soon take over mental problems usually classed as inferiority complexes, fears, obsessions, weakened mental reserves, and those who have lost their courage in the battle of life. When this becomes fully established it will make a call for a great number of well-trained men. It will amount to a practical religion. Members of the field department of the state bureau of health will more and more require trained men. They should be trained in the highly specialized departments of their own state university.

New towns and new cities are always in the process of formation. They must be attractive and have good physicians.

The medical school should have a good supply of trained men itself. Who knows but something shedding light on the cancer problem might develop within its walls? Let us remember the discovery of insulin.

From it should come the newer information on disease and its prevention. It should be of such a high character that the members of the medical profession could feel it a privilege to repair to it at times in a post-graduate way for new light on their problems, and it would then become not only an inspiration for the young but also a comfort to the older. To this end a good hospital must be here. Then the place should be a mecca for every man in the state, as well as his pride. Let us not quarrel as to where this hospital will be, but call in the better equipped men of the profession and in a frank manner ask them to cast their local pride aside for the desire of a great university. Have the hospital in Morgantown.

Just what could be done in eventually sending the dependent sick of the state here will be a matter of future guidance. It ought not to be a matter of enough importance to merit its being an obstacle.

The establishment of this medical school here is a necessity first. A matter of great state pride as well. It will call for the exhibition on the part of some to give up their selfish interests. It will be the measure of the petty-minded. For some will believe it will mean giving up some state hospital or sanitarium to be found within their borders. Of course, it will not. Most of them should at once be enlarged. Some may be envious, believing it will make Morgantown too much of a power in a civic way. We should be sorry over any one entertaining so narrow a view. This is a shining place for that celebrated saying, "One for all and all for one." Then, of course, we must meet the small-minded politician. It is too bad we can not afford to send these narrow-minded men into some of the western states, where they could see the pride that is taken by all the farmers, citizens of cities and elsewhere, in their state universities. Send them to Iowa, for instance, or down to that great, coming state of North Carolina, where you can begin at Greensboro, go over to Chapel Hill where their admirable state university is, and, passing through Durham, full of the spirit of Duke University, over to Raleigh. It is one grand procession of colleges. There must be at least ten. Education and fine universities are the measure of a state, and every one in this Union knows that before very long North Carolina is going to be one of the greatest of them all. Duke University will have a fine medical college, so the report goes. Would it not be a matter of deep regret for us to ultimately become one of the only states without a medical college, and who could answer why? So, whatever politician (and there are going to be some) gets in the way of this project can be examined with some misgivings for his state pride as well as his worth to the commonwealth.

The writer is in receipt of a letter from Senator-elect Hatfield, wherein he stated he advocated a wider scope to the University many years ago, but that in some manner it became lost in the shuffle. Let us beware of the politician who obstructs this program.

The State Board of Health needs to be visualized, to the public and its instrument, the state legislature, as the next important piece of state machinery to the bureau of taxation. To the minds of some of us it is of more importance, but the popular mind is not as yet ready to receive so revolutionary an idea. To the lay mind, property still takes precedence over health. A man will see clearly that there should be a fine structure here dedicated to the study of law, since one never knows when some one will claim a cow or trespass on his vested rights, or that his wife may try to enter a plea for divorce. Controversy is still a human attribute and will probably exist for some time to come. But controversy is in most cases of quite trivial origin and surely preventable if taken in time. The day will soon come when there will be a state board of law patterned after the State Board of Health, and its function will be to prevent controversy, and this will entail a law research laboratory just like we so strongly desire for medicine. We must have civil law as long as we have individualistic government, else no one would be secure in the possession of his home or his property; but, after all, you can lose your property and begin all over and obtain more, but health, once lost, is not so easily recovered. It is to be hoped, then, that the coming legislature can be made to see the importance of health as the biggest asset of the state. It is the wish of most of us that it will readily see that, without health, nothing else matters. We medical men do not mean that a man should give up most of his day, fearful of what may beset him in the way of disease. Far from it. We hope to make it so he will have to give less thought than ever about it. The State Board of Health, backed by the West Virginia State Medical Association, would take away, as far as possible, all known sources of infection and disease so that any citizen could feel reasonably certain that he could go about his business relieved of the fear that his surroundings are not as nearly purged of all menace as scientific research today permits

them to be. He can take a glass of water anywhere with confidence. He can eat food procured at random without reserve. He can live in a community with the thought that his sanitation and sewage are adequate. He can know that one disease after another is being stamped out, and that his span of life is daily becoming lengthened in years and in enjoyment.

No undue limit should therefore be put on expenditures for health. Wisely administered—and we have never heard of any graft in the Health Bureau—the money for health is always well spent. It should be given to this department freely and not in the niggardly way that too often marks its bestowal. Nor should there be any haggling over the cost of a new medical building. The cost of health never admits haggling. Some one always suffers. If you have to go through an appendectomy, there can be no debate about its reasonable cost. If there is a typhoid epidemic, then it must be stamped out, whatever the bill. Every one goes the limit of his resources to gain his health. All else is sacrificed, because, as it has been said so many times before, health is first. Do you not know that Rome is supposed to have fallen because of malaria rather than its lack of military resources? The millions of natives in India are ruled by a few British, and one of the reasons is that their sanitary procedures are so hopelessly obsolete that they are impoverished in resistance and present a lamentable picture of robust attainments in bodily growth. India may have received the worst of it in "Mother India," but a mere presentation of photographs of natives from that unhappy land is all you need to know that what they need more than a new independence is a good code of health administration. If all this be so, and it certainly is, then let legislators for once read the writing on the wall. Build a medical school that shall reflect the importance of the subject of health to the taxpayer. The institution is to prevent disease by research and discovery. To save the people from operations. To guard against epidemics, any one of which, if it became rampant, could be more costly than five medical buildings. The building should be large, commodious, serviceable, and complete, with no hint that West Virginia had any other aim than to build a college that would be a class A from roof to cellar. No suspicion that it would ever be one that some day would be discarded as not eligible to the highest rating. It must be imposing, yet simple and dignified. The costs of such structures are standardized. It must be placed in a situation its services merit, and not lost in a general view of the collegiate buildings. It is up to the profession of this state to see it will reflect their services of the past. Let us have no picayune economy in the rearing of its proud front. Let it swing its banner where all may read and feel the importance of its sound mission.

Summarizing, we should say the other states of this Union have about all added a full-term medical course to their universities. We but show a cruel backwardness in not already having one. If we continue to argue it, in the end we will appear absurd to our sister states. We now have to beg the other universities to take in our two-year medical men. By and by it will become hazardous to take this medical course. It is a gamble now. Some day other medical colleges may, rather vulgarly but nevertheless effectively, put their fingers to their noses and say, "What have you?" "Some two-year medical men," we reply. "Well, why don't you finish what you began? We can't take them," they will lightly reply, and it will be a good answer.

Good medical men will go to any good locality where a reasonable return is offered. Many men, by taste and inclination, prefer small-town work. This is, therefore, a civic question.

Clinical material has been obtained in other places with more formidable objections than Morgantown presents. If others solved it, why not we?

The cost of the building is of no consequence, whatever it is. Being a necessity and for the immediate good of the state, it is a crying need as well as an emergency.

Something tells us, as we said in the beginning, that we are very near to taking this medical department with is building down near the railroad tracks up on the campus and making it a real medical school. Those who have labored long with it where it is surely deserve so welcome a transition. When it does, medical education in West Virginia will mean something. The medical profession itself will take on an added significance because it will be up to it to father the school through its infancy, its youth, to an adult standing in the corridors of its kind.

The people of this state will have cause for rejoicing, as making them able to know their health is better safeguarded than ever. Lastly, President Turner can go out—here, there, anywhere—meeting the compatriots of other universities in discussion and debate, conscious that among other departments in which he has a just and lasting pride is a full-

termed medical school, second to none, let us hope, in efficiency and achievement.

And I trust every man here today cherishes these sentiments.

CASE REPORTS

Sphenopalatine Ganglion Neurosis

By MATTHEW F. C. ZUBAK, M.D.
Wheeling, W. Va.

The following case is reported because of the peculiarity of the symptoms and because of the ease with which one might have erroneously diagnosed it hysteria, functional neurosis, or some other condition.

Mrs. G. W., aged 48, was first seen on January 28, 1927. Her chief complaint was: Attacks of severe pain in left side of face, nose and head, with resulting redness of the left eye and intense lacrimation, all lasting 45 minutes or more at a time and recurring once or twice daily. The scalp was so tender that she could not comb her hair; face, nose, and left temple were very tender to touch.

She had had this trouble off and on since July, 1926, and had sought relief from her family physician and a rhinologist, but neither could find anything definite to account for these spasmodic attacks. Powdering her nose, washing her face or combing her hair would precipitate an attack, and, although socially prominent, she had to forego social engagements because of her inability to fix her face and hair properly and because of the sudden onset of the attacks, which were so severe that they prostrated her.

She had had no nasal discharge at any time, excepting for a head cold Christmas week. An x-ray of her sinuses was reported negative, save for a slight shadow in the region of the left ethmoid labyrinth. This sounded so typical of sphenopalatine ganglion neurosis that it was deemed wise to prove or disprove this supposition. Transillumination showed no shadow of either antrum or frontal, and shrinkage of the nose disclosed no pus in either middle meatus. The left middle turbinate was jammed against the septum, which was bowed to the left, high up posteriorly, occluding the superior meatus. Upon inserting an applicator in between the middle turbinate and the septum in the location of the sphenoid ostium, a typical attack as described by the patient was immediately provoked. Applying 20% cocaine to the region of the sphenopalatine ganglion stopped the attack in about five minutes, much to the surprise and gratification of the patient, who exclaimed that never before had an attack subsided in less than 45 minutes, while some lasted an hour and a half. Upon removing the applicator, it was found covered with yellow pus. Bacteriological examination showed staphylococci and streptococci.

At a subsequent date, under nitrous oxide anesthesia, the left middle turbinate was refracted so that the ostium of the sphenoid was accessible. Following this procedure, the sphenoid sinus was irrigated twice weekly with great amelioration of the symptoms and lessening of the attacks to once or twice weekly, and even then they lasted but a few minutes. Probing the sphenoid sinus always disclosed some purulent material on the cotton wound applicator.

On July 2, while at the country club, the patient had a severe attack lasting nearly an hour. From that time on she reverted to her original condition, having these spasms as frequently as six times daily. Resection of the septum and opening of the sphenoid had been advised with the return of her trouble, but was deferred for one reason or another. She consulted a prominent rhinologist in a neighboring large city and was advised to "have the left middle turbinate removed, as she was on the verge of developing *tic douloureux*."

On July 8 we operated upon her under ether anesthesia, resecting the septum, amputating the posterior half of the middle turbinate, which had become degenerated and polypoid, and enlarging the sphenoid ostium. Bismuth gauze packing was inserted for 24 hours and then removed. Daily dressings were done for two weeks, 10% silver nitrate being used to touch up the raw areas. The patient was then discharged from the hospital and irrigation of the sinus was reinstated twice weekly at the office. This was discontinued after a month. There has never been another spasmodic attack following the day of the operation, and the tenderness and sensitiveness of the face, nose, scalp and temple have disappeared. There is yet an occasional scabbing high up posteriorly in the nose, but this can be removed readily, and no other treatment has been found necessary.

Five previous cases of sphenopalatine ganglion neurosis have all been cleared up by the simple procedure of irrigating the sinus two or three times weekly, with refraction of the middle turbinate where necessary to allow access.

In all six cases, pus was found in the sphenoid sinus and the inference drawn is that the trickling of pus over the ganglion has provoked the syndrome.

Injection of the ganglion has never been tried, as it was our feeling that the ganglion symptoms were the result while the sphenoidal infection was the cause. Treating the cause is naturally more satisfactory than treating results, hence there was no need for ganglion injections.

ABSTRACTS

Consideration of High Blood Pressure Due to Small Lungs

LINTZ, WM.—Lintz draws the following conclusions from his study of high blood pressure:

1. Hypertension is responsible for more deaths than tuberculosis and cancer combined.

2. Heredity is the most important known factor.

3. Hypertension is due to a spasm of the anteriocapillary bed, produced by the vasometer center in the medulla.

4. Death is caused, in order of frequency, by heart failure, cerebral hemorrhage, arteriosclerosis, and nephritis.

5. Blood transfusions lower blood pressure.

6. Polycythemia frequently exists without hypertension.

7. Sodium chloride is not a factor in hypertension.

8. Hypertension belongs to the allergic group of diseases.

9. Hypertension cases stand operations well, hypotension cases poorly.

10. Psychic and actual pain raise blood pressure decidedly in hypertension cases, but only negligibly in normal cases.

11. Stable blood pressure has few symptoms; labile blood pressure has many symptoms.

12. Variations and long remissions frequently occur in hypertension.

13. Prognosis of a case may be made from study of a hypertensive relative.

14. Absence of axillary hair is a frequent finding in hypertension, especially in women.

15. The endocrine glands have an important bearing on hypertension.

16. Hemorrhage in the brain lowers blood pressure.

17. Retinal hemorrhages prognosticate cerebral hemorrhage.

18. The diastolic pressure is more important than the systolic.

19. Hypertension does not contraindicate the use of digitalis.

20. Valvular lesions are not responsible for hypertension.

21. Dropping blood pressure in old age means cardiac weakness.

22. Spasms of the renal vessels, arteriosclerosis leading to renal damage, is the true sequence in essential hypertension.

23. Hypertension exists more often in the young than is usually believed.

24. High altitude lowers blood pressure; low altitude raises it.

25. Alcohol lowers blood pressure.

26. Smoking is injurious in hypertension.

27. Syphilis is no factor in hypertension.

28. The height of blood pressure alone is no criterion as to the severity of the disease.

29. Calcium iodide in sixty-grain doses t.i.d. p.c. was found beneficial in asthma and in hypertension.

Lintz draws attention to the fact that in very many patients with essential hypertension, especially in females, he has found the lungs smaller than usual. Whether the lungs are the result or cause of the hypertension it is impossible to say. Increased weight is common in hypertension. The author wonders if the small lungs may be at least partly accounted for by the high diaphragm resulting from the increased abdominal fat. Does the improvement in many cases following reduction in weight lie in the improvement of diaphragmatic respiration and consequently more efficient oxygenation? To the neuropathic, endocrinopathic and basopathic inferiority of the essential hypertension subject Lintz adds also this pulmopathic inferiority.

His conclusions were drawn from röntgenologic study of 100 patients.—*International Clinics*, December, 1927.

Intradermal (Injection) Vaccination

The multiple pressure method has been used in thousands of vaccinations performed by various vaccinators in different parts of the country and has

successfully met the requirements set forth by Charles Armstrong, Washington, D. C. (*J. A. M. A.*, Nov. 17, 1298), of a satisfactory method. With this method the insertion is made through a drop of virus by pressing the side of the needle point rather firmly against the taut skin and raising and lowering it from twenty to thirty times. The pricks should cover an area never more than one-eighth inch in greatest diameter. The virus is wiped off immediately and, as the trauma is scarcely visible, the uselessness of a shield or dressing, which may lead to unsatisfactory results with any method, is apparent to the person vaccinated. This method gives a typical vesicle of maximum firmness, since the procedure neither removes nor destroys the epidermic and thus, as shown by experience, there is little chance of accidental infection.

Fallacies Concerning Chronic Appendicitis

John Berton Carnett and Russell S. Boles, Philadelphia (*Journal A. M. A.*, Dec. 1, 1928), believe that so-called chronic appendicitis is not a disease limited to the appendix. It is invariably a more generalized condition which involves a consideration of the habitus of the individual, the entire gastrointestinal tract, especially the colon, and the sensory nerves in the abdominal wall. They believe it is most frequently found in a certain constitutionally inferior type of individual who has a predisposition to much functional disease. The majority of patients who have undergone an unavailing operation for chronic appendicitis fall clearly into the asthenic, visceroptotic group characterized by nervous instability and persistent functional digestive disorders. Chronic digestive trouble for which there is no ascertainable cause is not cured by appendectomy. All the symptoms ascribed to chronic appendicitis can easily be found in hundreds of patients months or years after the appendix has been removed. Röntgen-ray apparatus is almost invariably laboratory appendicitis, but neither of them is apt to be clinical appendicitis. Great value attaches to the röntgen examination of other parts of the gastrointestinal tract, however, in that it may disclose some unsuspected organic disease such as ulcer, gallbladder disease, urinary calculus, carcinoma or tuberculosis of the bowel or colitis. The usual location of chronic pain and tenderness in the lower right quadrant is in the anterior wall of the abdomen and not in the appendix. The parietal pain and tenderness are due to various forms of irritative lesions of the right tenth, eleventh and twelfth intercostal and first lumbar nerves, and can be cured by treatment of the underlying cause, usually a scoliosis, spinal arthritis, or excessive lumbar lordosis and toxemias of various origin. Carnett and Boles are absolutely opposed to the theory of the visceroparietal reflex, and believe that any effort to apply it leads to needless appendectomies and other futile intraäbdominal operations. Localized or excessive tenderness at McBurney's point is often due to one of the "tender points" of parietal neuralgia. Persistent prolonged tenderness is rarely due to chronic appendicitis and it commonly persists for months or years after operation in patients subjected to appendectomy. Appendectomy for chronic appendicitis should be restricted to the relatively rare cases in which röntgen examination by a competent röntgenologist reveals evidence of adhesions binding together structures in the appendix region and causing more or less intestinal obstruction. Under these exceptional circumstances the operation is undertaken primarily because of adhesions and the appendectomy is merely incidental. The treatment of so-called chronic appendicitis begins with a complete survey of the patient. The fundamental part of the treatment is one of reconstruction. As these patients are usually underweight and visceroptotic, they should be placed on a diet designed to increase weight and to overcome intestinal stasis. The usual spasticity of the colon in these cases calls for a bland diet; hence, foods containing an excess of cellulose, such as raw fruits, green vegetables, and bran, are forbidden. Generous amounts of milk, cream, butter, cereals, and such starch foods as rice, potatoes, and macaroni, are desirable; and custards, junket, gelatin, and small amounts of chicken, lean meats, fish, and eggs. A morning dose of some mild aperient, such as sodium phosphate, is indicated to correct stasis. Hot fomentations over the abdomen for one hour two or three times a day aid in relieving spasm and local soreness. Rest periods before and after meals, for from one-half to one hour, are distinctly beneficial; or, if the case is severe, complete rest in bed for several weeks may be required. The application of a well-fitted abdominal pad or corset is advisable if there is much ptosis. This may form part of the orthopedic corset or brace required for excess lumbar lordosis or spinal arthritis. These should be worn until there is a substantial increase in weight. Exercises designed to strengthen the abdominal muscles and to correct the faulty posture, especially scoliosis and lordosis, are of particular importance. Toxic foci in teeth, tonsils, colon and elsewhere should

receive appropriate attention. Drugs other than laxatives have a limited value, and the most important are those of a sedative nature. Sleep is imperative and may be secured by bromides or barbituric acid hypnotics. Such general tonics as strychnine, iron, cod-liver oil and arsenic are helpful. To assist elimination, agar-agar, psyllium seeds or liquid petrolatum may be used with benefit for an indefinite time. The use of alkalis, such as sodium bicarbonate, calcium bicarbonate, and magnesium oxide, may be given to relieve symptoms of hyperacidity, but in large amounts they may cause distinctly disagreeable symptoms of a toxic nature.

Habitual Dislocation of Shoulder

Following a failure from the tenosuspension operation, it occurred to W. B. Carrell, Dallas, Texas (*Journal A. M. A.*, Sept. 17, 1927) that a combination of reefing and suspension would have the greatest opportunity for success. It was done as follows: The biceps tendon was exposed through an anterior incision extending to a point one-half inch below the tendon of the pectoralis major. The biceps tendon was sectioned at the lowest level and reflected from its sheath up to the point where it emerges from the capsule. The distal end was fastened into the coracoid head of the biceps. A strip of fascia 6 or 7 inches long free end of the biceps tendon. A posterior incision was then made, extending from the acromion downward on the posterior surface of the arm 4 inches. The deltoid separated, and the teres minor was exposed. The biceps and fascial strip was now passed under the neck, penetrating the capsule, in and out, at two points; it was threaded on a special instrument fashioned like an aneurysm needle. The instrument hugs the capsule and emerges just above the teres minor, where it is secured through a drill hole in the acromion. The arm is dressed by the side, and motion is gradually resumed after three weeks with free action after ninety days.—*Nebraska Medical Journal.*

Hypothyroidism and Hyposuprarenalism

The studies made by Alfred E. Koehler, Chicago (*J. A. M. A.*, Nov. 10, 1928), suggest that much of the similarity and difference between hypothyroidism and hyposuprarenalism lies in the possibility that in the former there is a primary depression of oxidation in the tissues, while in the latter there is a secondary depression due to faulty oxygenation, probably caused by vascular and muscular atonia, which in turn is caused by an impaired autonomic system due to cortical insufficiency. With these mechanisms as a background, many bizarre clinical pictures may present themselves. The weakest structure or organ in the body is naturally the first to be affected by these glandular dysfunctions. Thus, a dry skin may for years be the first and only sign of hypothyroidism, and later somnolence and fatigue may develop, or *vice versa.* Similarly, hyposuprarenalism may first manifest itself as a marked depression of the higher centers, or as a severe low-back pain, or as a gastrointestinal disturbance. The difficulty so often is that these patients are treated for these specific ailments and, naturally, without lasting improvement, if any. The problem must always be to locate, if possible, the fundamental physiologic disturbance of which these various ailments are only symptoms. To this end, accurate and careful diagnosis must precede treatment in the endocrine field.

Medical and Pharmaceutical Cooperation

Perhaps one of the outstanding reasons for the progress in the scientific development of new products has been the spirit of coöoperation which has existed between the medical profession and the pharmaceutical industry.

By this close coöperation medical science has contributed to pharmaceutical progress and the manufacturing pharmacists of the country in turn have made a definite contribution toward the development of new medicinal products.

On Wednesday, December 5, the officials and members of the medical, pharmaceutical and allied professions of Lafayette, Indiana, were addressed by Dr. Charles E. Vanderkleed, chairman of the Contact Committee of the American Pharmaceutical Manufacturers' Association.

The subject of Dr. Vanderkleed's address was, "Improvement in the Quality of American Drug Products Due to Coöperation in the Industry." It is interesting to see the representatives of the several allied professions making arrangements for a periodical study of mutual interests of professional nature with a view to increasing mutual usefulness.

It is only through medical and pharmaceutical coöperation that the greatest advances can be made in conquering disease and improving the health of the American people.

TUBERCULOSIS ABSTRACTS

Hippocrates wrote many medical aphorisms which, like Gee's clinical aphorisms, are well known. Always concise in presentation, these aphorisms lead to thought, arouse discussion, or foster healthy disagreement. This, Lawrason Brown states, was his desire when his own "Tuberculosis Theses" were published in complete form a decade ago. Today they epitomize what the average physician finds from his experience, and, colored no doubt by the experience of many men, they serve as his guide for action. Because they do serve "as a guide for action," they are presented here in part:

Diagnostic Theses

1. An appearance of ruddy health does not exclude tuberculosis.

2. Prolonged and intimate exposure at any time of life, but especially in childhood, is vastly more important in diagnosis than "unassociated" or "non-contact" heredity.

3. Constitutional or general symptoms lead toward the diagnosis of tuberculosis, while the localizing symptoms point out the organs involved.

4. The history or presence of certain complications, as fistula in ano, pleurisy, adenitis, a discharging ear coming on painlessly, are all strongly suggestive of tuberculosis.

5. Pleurisy with effusion, not attributable to other causes, should be treated for a time as due to tuberculosis.

6. A diagnosis, tentative at least, must be made whenever an individual spits a dram or more of blood that can not be proved to be due to other causes (*e.g.*, mitral stenosis).

7. Symptoms indicate that a patient is sick, while physical signs point out only the mischief that has been done.

8. Symptoms without physical signs demand treatment, while physical signs without symptoms require often only careful watching.

9. Absence of tubercle bacilli in the sputum means only that bronchial ulceration has not occurred.

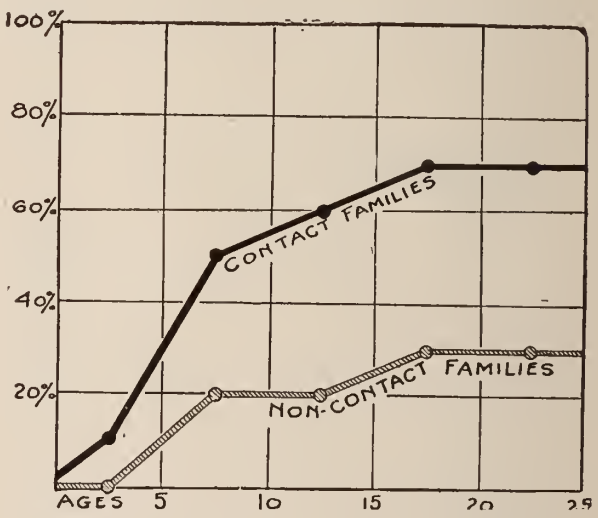
10. Auscultation is more important than inspection, and the detection of râles by the auscultation of the inspiration following cough is the most important procedure in the detection of physical signs of early pulmonary tuberculosis.

11. Localized râles at the apex are second in importance only to tubercle bacilli in the sputum.

12. The disease is practically always more extensive than the physical signs indicate.

13. Abnormal physical signs in one apex should be considered as due to pulmonary tuberculosis until proved not to be, while those at the base should be looked on as non-tuberculous until definitely proved so.

14. The fluoroscope, the röntgenogram and particularly stereograms may reveal and locate pathological pulmonary changes to be detected by no other means.



Tuberculous Lesions in Children of Contact and Non-Contact Families, According to Age Groups (Opie and McPhedran).

15. Extensive "peribronchial" changes in stereograms may occur with slight or no physical signs, while parenchymatous changes are usually accompanied by abnormal pulmonary sounds.

Prognostic Theses

1. Puberty and the menopause have less bearing upon the disease than pregnancy, especially repeated, frequent pregnancies, and hence marriage for women increases the uncertainties.

2. The mentality and characteristics of the patient's family, their ability and willingness to help in his recovery by self-sacrifice over long periods of time, are most important.

3. He who returns to his former occupation when congenial and not complicated by sudden great effort and so makes his living with least exertion and worry avoids relapse most often.

4. Recovery in a climate in which a patient is to live, especially if accomplished at home, bespeaks greater longevity than immediate change of climate on arrest of disease. Climate may be only a minor factor in this effect.

5. An acute onset with extensive physical signs or with severe and protracted symptoms points to a prolonged illness or an early fatal termination.

6. The continuous gain of weight on an ordinary diet is the best indication of favorable progress, but can occur with advancing disease.

7. Digestion is the keystone of the prognostic arch.

8. Fever is the best sign of progressive disease and its chances of disappearance are inversely proportional to the length of time it has persisted.

9. Persistent high temperature under appropriate treatment, with slight physical signs, is grave.

10. The pulse rate, together with the temperature and weight, forms the prognostic triad.

11. Uncontrollable, excessive cough is the worst form of overexercise and favors a quick deterioration of the bodily resistance.

12. Physical signs tell by inference what has happened in the lungs; symptoms, what is happening. The general condition is more important than the physical signs or the history.

13. Extent of disease marks the time element; intensity, the acuteness.

14. Improvement and even arrest may occur without change in physical signs.

15. Tubercle bacilli in the sputum indicate bronchial ulceration, and, the larger the number, possibly the greater or more acute the ulceration; but enormous masses may occur in favorable cases.

16. Duration of treatment of less than three months is of little permanent help, while three or four years of treatment may complete an arrest.

Therapeutic Theses

1. The treatment of pulmonary tuberculosis demands little knowledge of drugs but much about the immediate and *prolonged* education of the patient.

2. The marked tendency to temporary arrest or quiescence, even in advanced stages, rests upon the brow of the tuberculous evildoer like the curse of Cain.

3. The danger time in tuberculosis, the periods of the "false convalescence" of Laennec, can not be overemphasized.

4. The time allotted to treatment is usually too short, for recovery is ever longer than onset. The value (possibly the results) of treatment increases as the square of the time; that is, two years are four times as valuable as one.

5. At home and abroad, in the desert or on the ocean, in the lowlands or upon the mountains, patients may recover anywhere and everywhere, for it matters less where than how they live.

6. The sanatorium, the best place in which to treat patients in large numbers, has shown that permanent arrest may follow effectual treatment; the hospital has afforded evidence that direct contagion may in part be controlled, while the dispensary has become the advanced attacking line, so to speak, that carries the warfare into the enemy's camp.

7. The length of stay in these institutions depends upon the object to be attained: for permanent recovery, two or three years; for quiescence, at least three months; for prevention of infection from far-advanced cases, as much as possible of the time between admission and death.

8. Remember that too much food may, in the end, prove as disastrous as too little food.

9. Exercise should be regarded as a powerful and dangerous medicine.

10. Since the vast majority of patients must seek treatment only in the climate in which they contract the disease, the so-called climatic treatment is of importance to hardly more than 5 per cent of all patients.—*Tuberculosis Theses*, Lawrason Brown, M.D.; abstract supplied by West Virginia Tuberculosis Association.

Gallbladder Radiography

Tetraiodophenolphthalein in colloidal suspension is the latest development for visualization of the gallbladder. The use of this medium was described by Dr. Bernard Fantus in the *Journal of the A. M. A.* of July 16, 1927.

As the result of subsequent research, colloidal tetraiodophenolphthalein is now available in a form stable toward the gastric juice and readily absorbable from the intestine. The dose containing grams of dye is given in a glass of water. Experiments covering a long period have shown that tetraiodophenolphthalein, administered in this colloidal form, normally gives a distinct cholecystogram within twelve hours. It is claimed that the possibility of non-visualization is reduced to a minimum and that nausea, laxative action, or other discomforts are seldom encountered. In this new colloidal form, the chemical will be known as Chole-cysto-col and will be marketed by the Abbott Laboratories, North Chicago, Illinois.

THE WEST VIRGINIA MEDICAL JOURNAL

JAMES R. BLOSS, *Editor-in-Chief* - - - - - - - - - Huntington

...ASSOCIATE EDITORS...

J. HOWARD ANDERSON, Marytown — WALTER E. VEST, Huntington — C. A. RAY, Charleston — HARRY M. HALL, Wheeling

THE JOURNAL issued on the first of each month. Entered as second-class matter January 1, 1926. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917. Authorized July 24, 1919.

Subscription to Members ..... $2.00 Per Year
Subscription to Non-Members ..... $3.50 Per Year
Single Copies ..... 50 Cents

OFFICERS

President:
H. M. HALL ..... Wheeling

First Vice-President:
B. F. BONE ..... Moundsville

Second Vice-President:
W. C. SWANN ..... Huntington

Third Vice-President:
J. A. DUFF ..... Martinsburg

Executive Secretary:
MR. JOE W. SAVAGE ..... Charleston

Treasurer:
T. MAXFIELD BARBER ..... Charleston

Delegates to A. M. A.:
JAMES R. BLOSS (1928-29) ..... Huntington
HENRI P. LINZ (1928) ..... Wheeling

Alternates:
A. A. SHAWKEY (1928-29) ..... Charleston
HARRY M. HALL (1928) ..... Wheeling

COUNCILLORS

Chairman of the Council for 1928:
R. H. DUNN ..... South Charleston

First District:
C. W. WADDELL (2-year term) ..... Fairmont
C. G. MORGAN (1-year term) ..... Moundsville

Second District:
C. H. MAXWELL (2-year term) ..... Morgantown
C. H. HALL (1-year term) ..... Elkins

Third District:
JOHN FOLK (2-year term) ..... Bridgeport
J. D. COLE (1-year term) ..... Clarksburg

Fourth District:
ROY BEN MILLER (2-year term) ..... Parkersburg
W. E. VEST (1-year term) ..... Huntington

Fifth District:
J. HOWARD ANDERSON (2-year term) ..... Marytown
H. G. STEELE (1-year term ..... Bluefield

Sixth District:
R. H. DUNN (2-year term) ..... South Charleston
H. A. WALKUP (1-year term) ..... Mt. Hope

¶ All original articles for THE JOURNAL must be made to it exclusively. Communications and items of general interest to the profession are invited from all parts of the state. Notices of deaths, removals from the state, changes of location, etc., are requested.

¶ Our readers are requested to send marked copies of local newspapers containing matters of interest to members of the medical profession. Name of sender should be given.

CONTRIBUTIONS TYPEWRITTEN

¶ Contract with present printer specifies all articles, communications, etc., MUST BE TYPED.

ADVERTISEMENTS

¶ Advertising forms will go to press not later than the tenth of each month. All advertisements must conform to the standard established by the Council of Pharmacy and Chemistry of the A. M. A.

WOMAN'S AUXILIARY

Mrs. R. V. Shanklin, Gary, President; Mrs. T. H. Harris, Parkersburg, vice-president; Mrs. W. C. Swann, Huntington, secretary; Mrs. W. D. Simmons, Slab Fork, treasurer.

Councillors

Mrs. C. G. Morgan, Moundsville, first district; Mrs. Ralph Maxwell, Morgantown, second district; Mrs. H. D. Price, Parkersburg, third district; Mrs. J. R. Bloss, Huntington, fourth district; Mrs. A. G. Rutherford, Welch, fifth district; Mrs. E. S. DePuy, Beckley, sixth district.

Delegates to Woman's Auxiliary of A. M. A.

Mrs. R. V. Shanklin, Gary; Mrs. B. S. Preston, Charleston. Alternates — Mrs. George Jeffers, Parkersburg; Mrs. W. B. Scherr, Morgantown.

STANDING COMMITTEES

Medical Defense Committee

C. G. Morgan, Moundsville, Chairman; H. A. Walkup, Mt. Hope; H. G. Steele, Bluefield.

Committee on Scientific Work

O. B. Biern, Huntington, chairman; G. H. Barksdale, Charleston; A. G. Rutherford, Welch.

Public Policy and Legislative Committee

R. A. Ireland, Charleston, chairman; R. H. Walker, Charleston; James McClung, Richwood; C. R. Ogden, Clarksburg, D. A. MacGregor, Wheeling.

Committee on Medical Education

John N. Simpson, Morgantown, chairman; W. T. Henshaw, Charleston; W. S. Fulton, Wheeling.

Committee on Professional Relations

John R. Shultz, Charleston, chairman, (5-year term); A. G. Rutherford, Welch, (2-year term); W. R. Goff, Parkersburg, (2-year term); Hugh G. Nicholson, Charleston, (3-year term); E. P. Smith, Fairmont, (4-year term)

Workman's Compensation Committee

W. A. MacMillan, Charleston, chairman; C. A. Ray, Charleston; John E. Cannaday, Charleston.

Committee on Public Health

David Littlejohn, Charleston, chairman; John Thames, Charleston; Will McLain, Wheeling.

Surgical Section

Robert King Buford, Charleston, chairman; B. I. Golden, Elkins.

Eye, Ear, Nose and Throat Section

I. D. Cole, Clarksburg, chairman; C. C. Jarvis, Clarksburg.

Hospital Association Officers

R. A. Ireland, Charleston, president; J. S. Turk, Wheeling, president-elect; B. I. Golden, Elkins, first vice-president; W. E.Vest, Huntington, second vice-president; Mr. Joe W. Savage, Charleston, secretary-treasurer.

PRESIDENT'S PAGE

THIS letter will be fraught with both hopes and wishes. Hopes to emulate the solid qualities of our past president, Dr. Ray. Wishes for the support of the medical fraternity of the great state of West Virginia in the coming year, to make ours one of the best-known associations of its kind in the country.

In listening to many men of many minds in the profession to which we belong in the last year, they may have differed on a number of things, but they have all agreed that the practice of medicine and surgery is undergoing a subtle but momentous change. Every individual seems to feel this, and still no one is able to tell just what it is. It will therefore be the business of all of us to see if it can, somehow, be made more apparent.

The general practitioner may be going, although about this not all are agreed. The age of continuously looking over the body machine may be here, as heralded, but that also presents its difficulties. Adjustment may be the order of the day.

The most important matter, then, must be for the men who do not belong to a medical society (and those who do belong and find reasons not to attend or take an interest) to ally themselves at once with their nearest organization, conscious that it is going to take the united efforts of every one of us to preserve the healing art so that every single man who practices it may have a major, dignified work to do and receive ample pay for performing it.

The legislature will be in session soon. It must be remembered it is not his nor her legislature alone, but it is *your* legislature. If it has a bill before it inimical to the work you are doing every day, the success of those delegated to thwart its passage will depend upon the punch you put into a message to your representative, acquainting him with your reasons for objecting to it. At the same time, a few words of encouragement to those striving for you in Charleston will hearten them. Whatever we do, let us always do it quickly. From now on, let us keep our ears to the ground.

Harry M. Hall

EDITORIALS

Building Fund Created

The West Virginia State Medical Association has just learned that the McDowell County Medical Society has created a building fund to be presented to the state association when the latter organization is ready to purchase or erect a permanent state home in Charleston, W. Va. The treasurer of the McDowell society was directed to deposit the sum of $50 on savings account, and at the end of each calendar year, beginning 1929, ten per cent of the net surplus of the society is to be deposited to the credit of this account. The principal and the accrued interest thereon is to be applied to the purchase or erection of a building to be known as the Home of the West Virginia State Medical Association, the same to be located in the city of Charleston.

Here is something new, and something highly commendable. It is, so far as we know, the first definite and concrete step ever made in West Virginia for the sole purpose of creating a state home. This admirable objective has been talked of for several years, and now comes the news of an actual fund set aside for no other purpose than the purchase or erection of a building. The action of the McDowell society was purely voluntary. We do not bring this matter to the attention of the association members with the idea of influencing other county societies to take similar action. We simply wish to congratulate the West Virginia State Medical Association upon the thoughtful initiative of one of its component groups.

Advertising Power

The thirty state medical journals published in this country have almost the same circulation as the *Journal of the American Medical Association*, yet an advertisement in the A. M. A. journal will bring twice as many answers as the same advertisement in all of the state medical journals. This statement was recently made by Mr. E. W. Mattson, manager of the Coöperative Medical Advertising Bureau of the A. M. A., in connection with a program he has instituted to draw better advertising results from the state publications.

It seems likely, he continued, that many members of a state association will answer an advertisement in the A. M. A. journal, though the same advertisement appears at the same time in their own state journal. It is up to the managers and editors of the state publications to cultivate their readers and, through editorials and other methods, persuade them to answer the advertisements in their own journal; otherwise, the state journals may be eliminated from many national accounts which keep track of inquiries.

Mr. Mattson has suggested that each journal have printed, at its own expense, a number of stamped postcards that can be filled in as orders for various pamphlets, samples, and products advertised therein. These stamped postcards, according to the plan, are to be sent to any and all doctors who request them, in order to make it easier and more simple for doctors to order from the advertising section of their state publication.

The management of the WEST VIRGINIA MEDICAL JOURNAL considers Mr. Mattson's idea an excellent one. It always has been, and always will be, a difficult problem to interest doctors in the advertising sections of their state journal, even though the existence of any journal must depend upon that interest. The doctors of West Virginia, like the doctors of all other states, are prone to take the WEST VIRGINIA MEDICAL JOURNAL too much for granted. Any plan, therefore, that will tend to build up interest in our advertising section is always considered with a great deal of thought and concern.

The WEST VIRGINIA MEDICAL JOURNAL has adopted the plan of the Coöperative Medical Advertising Bureau. The office of the JOURNAL now has in stock these stamped postcards. We will be glad, indeed, to send a supply of them to any reader who will use them for the purpose for which they are intended. Just write to the WEST VIRGINIA MEDICAL JOURNAL, Charleston, W. Va., for your supply.

Dollars and Sense

While on the subject of advertising, a few words will not be amiss in regard to a recent book published by Doubleday, Doran and Company, and carrying the title *Dollars and Sense*. The book was written by Charles E. Carpenter, an elderly business man who admits no small degree of success, and is supposed to be an answer to *Your Money's Worth*. The latter work will be remembered because of its high praise of the Bureau of Investigation of the American Medical Association. The two authors of *Your Money's Worth*, Messrs. Fee and Schlink, held to the fixed principle throughout their work that

the public, considering the end-results, paid the bill for every advertisement published in America.

The interesting part of Mr. Carpenter's *Dollars and Sense* is his quarrel with the American Medical Association. He ushers in his quarrel with the statement that he has no quarrel with the American Medical Association, a dead give-away in itself. Then he relates a long story about Petrolatum U.S.P., dragging in Vaseline and Cosmoline. Just what Mr. Carpenter proved we have not yet been able to ascertain, but he seemed fairly certain that there had been skullduggery afoot somewhere along the line.

The main idea of *Dollars and Sense*, as far as we could make out, was that standardization was a pain in the neck and that the authors of *Your Money's Worth* were probably being paid by the Third Internationale. Fanatics, we believe he called them.

There is one thing that is proved in *Dollars and Sense*. That is, that advertising, fraudulent and otherwise, will continue to thrive upon the public purse. Members of the profession are fortunate that they do not have this troublesome problem to contend with in their own ranks.

"Clean the Air"

A committee to pioneer in a national movement to "clean the air" of fake advertising has recently been suggested by B. K. Pratt, representing station WBBM of Chicago. It will be very gratifying to members of the profession to know that a conference for this purpose has already been held, at which Dr. Malcolm L. Harris, president of the American Medical Association, and Dr. Morris Fishbien, editor of the A. M. A. journal, were in attendance.

It was feared by members of the conference that if nothing was done by the radio stations themselves in avoiding fake advertising on the air, they would have to face the objectionable alternative of censorship by the various legislative bodies. It was pointed out that "get-rich-quick" promoters, quack doctors, and questionable real-estate concerns, whose advertising will not be accepted by reputable newspapers and magazines, are now using the air to advance their schemes.

Judge Ira E. Robinson of West Virginia, chairman of the Federal Radio Commission, has said in regard to the conference, "The movement to eliminate the broadcasting of dangerous and untruthful advertising is commendable. I am much impressed with the desirability of barring from the air much that is now going over it."

The American Medical Association has long been in the forefront in exposing quack and nostrum advertising, and the activities of Dr. Harris and Dr. Fishbien is one more step along the commendable route followed in the past.

Reward of Kindness

Dr. J. B. Lohan, of Charleston, a member of the Kanawha Medical Society, is a former city health commissioner. Several years ago, while he was thus engaged, he received an emergency call to visit the home of Mrs. Tillie Justice Snyder, of Donnally street, Charleston. After his initial visit Mrs. Snyder always called Dr. Lohan when she needed medical attention.

A few weeks ago Mrs. Snyder died at the age of 64 years. It was known that she possessed some little money and property. When her will was read, it was found to contain a clause bequeathing to Dr. Lohan the sum of $500 for his kindness during her closing years. Thus, the human side of medicine is again brought to our attention.

Once Again

For some reason the business and economic side of medicine is neglected. There seems to be a reluctance on the part of many doctors to face it. It would appear that any discussion of these factors marks the one who calls them to view as not materially well off. However, this is not so. It is the injustice of it all that makes certain men speak out. It is true the so-called leaders of our profession who bring things about are in a great many instances well to do, so they naturally neglect this side. It is therefore often left to other men. That should make no difference.

To those interested there has been no better article for some time than "The Doctoring Business," by Cleon Mason, M.D., in the *North American Review* for December. Read also the traditional comment of Burgess Johnson in "The Last Word," page 770 of the same number, showing he read but did not understand Doctor Mason's article. He is prejudiced but is not aware of it. Secretly, he liked the previous article of the month before on "The High Cost of Doctoring," by Harding. Mr. Johnson's comments are of the saccharine variety—dripping. He is for the blessed "Bonnie Briar Bush" type. Whenever people of Mr. Johnson's point of

view run out of argument they revert to that celebrated and altogether time-worn statement, "But I like to believe that the best doctors are still not always the best advertised or the richest."

Many a good, intelligent woman has been ruined by indirect flattery who would never have succumbed to the direct. As long as the medical profession listens to the tale of their blessed humanitarianism, the longer are they still to be called "poor business men," which, today, whether you want it that way or not, is to be labeled "a failure." The *North American Review* is published at Rumford Building, Concord, New Hampshire. It is forty cents a copy. In telling you this we have no desire to advertise it, but we are in for nominating Dr. Cleon Mason to the "Hall of Fame" for stating a few very solid facts. H. M. H.

Restaurant Men Riled

The United Restaurant Owners' Association has entered tooth and nail into the tournament of publicity, and is justly deploring the negligence of the federal radio commission in permitting the dissemination of cigarette propaganda by the various broadcasting stations. Apparently the cigarette people stepped upon the toes of the restaurateurs when they claimed that a certain brand "satisfies the longing for things that make you fat without interfering with a normal appetite for healthy foods." The cigarette manufacturers are, of course, appealing to those who would have a sylph-like figure. And the United Restaurant Owners' Association wants every one to eat heartily.

The interesting part of the publicity copy released by the restaurant men deals with an editorial on the cigarette advertising problem that appeared in the December 8 issue of the *Journal of the American Medical Association*. The A. M. A. journal, while not dealing cards to the restaurant association, does strike the nail on the head with reference to "Lucky Strikes." The editorial follows:

"Who would have thought, ten years ago, that cigarettes would be sold to the American public . . . actually by insistence on the healthful qualities of certain brands?

"That American womanhood passed during the last five years through one of those periodic crazes that have afflicted womankind since the world began is not a secret. Indeed, women everywhere began to cultivate slyph-like figures, dieted themselves to the point of destruction; and tuberculosis rates, particularly for young girls, rose in many communities. . . .

"At the same time the manufacturers of 'Lucky Strike' cigarettes having secured, they claim, statements from 20,678 physicians that 'Lucky Strikes' were less irritating than other cigarettes, are promulgating a campaign in which they assert that these cigarettes do not cut the wind or impair the physical condition, and that 'Lucky Strikes' satisfy the longing for things that make you fat without interfering with a normal appetite for healthy foods. To which the simple reply is made: '*Hooey!*'

"The human appetite is a delicate mechanism and the attempt to urge that it be aborted or destroyed by the regular use of tobacco is essentially vicious."

OBITUARY

B. M. Chenoweth, M. D.

Word has just been received of the death of Dr. B. Moffett Chenoweth, of Wendel, near Grafton, Taylor county, W. Va. Dr. Chenoweth succumbed on December 2 at his home at the age of 57 years.

The deceased graduated from the Birmingham Medical College at Birmingham, Ala., in 1915, and was licensed to practice in this state the same year. He located in Taylor county, where he practiced until his death. He affiliated with the Taylor County Medical Society in 1925 and thereafter took an active and interested part in the affairs of that organization.

George M. Mayers, M. D.

Dr. George M. Mayers, of Fairmont, W. Va., dropped dead in Washington, D. C., on Sunday afternoon, December 2, as he was walking through a theatre. Dr. Mayers was born in Fairmont 51 years ago and received his early training in the municipal schools there. His death was attributed to heart disease, with which he had been suffering for a number of years.

Dr. Mayers served in the United States Navy medical corps for eight years, retiring in 1909 because of his health. He attended the University of Virginia medical school and was graduated in 1899. The deceased had a host of friends in Fairmont, where he has resided for the past fifteen years.

COUNTY SOCIETY NEWS

Lewis County

New officers of the Lewis County Medical Society who will serve during the year 1929 are: Dr. George Snyder, president; Dr. D. P. Kessler, vice-president, and Dr. A. F. Lawson, secretary-treasurer. All of the newly elected officers are from Weston. Dr. Snyder will succeed Dr. M. D. Cure, who served as president of the Lewis County society during the past year. Dr. Lawson will succeed Dr. O. L. Hudkins as secretary-treasurer. Dr. Hudkins was unanimously reëlected to the office, but declined.

The meeting was held in Weston on the evening of December 11, and other officials named at that time were: Dr. W. T. Smith, of Glenville, member of the board of censors, and Dr. M. D. Cure, Dr. E. T. W. Hall, and Dr. A. F. Lawson, delegates to the state meeting at Martinsburg. Alternates named were Dr. W. P. King and Dr. W. T. Smith.

At the December 11 meeting a motion to merge with the Central West Virginia Medical Society was brought before the society by Dr. E. T. W. Hall. After a lengthy discussion by the members present, the motion was voted down, the president casting the deciding vote.

A committee, consisting of Dr. Kessler, Dr. Lawson, and Dr. Hudkins, was appointed to arrange a banquet for the Lewis County society on January 8, 1929. The dentists, wives, and registered nurses of Weston will be invited to attend this function.

Monongalia County

Dr. T. Judd McBee, of Morgantown, was elected president of the Monongalia County Medical Society at a dinner held by the society at the Pleasante Inn, Morgantown, on December 4, 1928. Dr. McBee will succeed Dr. H. V. King, who served during the past year. Dr. G. R. Maxwell was elected secretary for the fourth consecutive year.

Other officers of the Monongalia society who were elected at the December 4 meeting were Dr. George W. Phillips, vice-president, and Dr. Eldon B. Tucker, treasurer. The former treasurer was Dr. W. C. Kelly, who died suddenly last summer. Dr. M. H. Brown was elected to the board of censors to succeed Dr. R. H. Edmondson, and Dr. F. T. Scanlon was named to serve on the board of directors of the Monongalia County Hospital.

Delegates elected to represent the Monongalia society at the state meeting at Martinsburg next May were Dr. F. T. Scanlon, Dr. C. F. Boyers, and Dr. C. R. Maxwell. Alternates were Dr. C. B. Wylie and Dr. H. C. Powell. There were thirty-one members present at the meeting.

Parkersburg Academy

The Academy of Medicine of Parkersburg held a very profitable and enjoyable meeting on November 8, 1928. The meeting was opened with an excellent luncheon at Trinity Hall.

The scientific program consisted of a paper by Arthur S. Jones, M.D., of the Orthopedic Clinic, Huntington, W. Va., on "Tuberculosis in Bone." As usual, Dr .Jones' paper as well as lantern slides were very interesting. Short discussions by members of the society followed.

Members present: Drs. R. H. Boice, Orva Conley, S. M. Prunty, E. C. Hartman, H. H. Veon, R. W. Corbitt, O. D. Barker, W. B. Richardson, D. C. Casto, E. S. Goff, U. L. Dearman, B. O. Robinson, S. H. D. Wise, Rolla Camden, C. L. Muhleman, C. D. Kraft, R. H. Wharton, J. E. McQuain, T. L. Harris, R. E. Davis, M. R. Stone, B. S. Parks, R. B. Miller, G. D. Jeffers, H. D. Price, L. O. Rose, O. J. Casto, H. M. Campbell, A. M. Dearman, and J. T. Goff.

JOHN T. GOFF, *Secretary.*

Fayette County

At its regular monthly meeting in Mt. Hope, December 11th, the Fayette County Medical Society elected its officers for 1929. Dr. M. C. Borman, Montgomery, was chosen president; Dr. H. A. Walkup, Mt. Hope, secretary; Dr. G. G. Hodges, first vice-president; Dr. W. E. Bundy, second vice-president; Dr. L. G. Houser, third vice-president; Dr. E. E. Jones and Dr. E. J. Grose, censors. Dr. B. F. Brugh and Dr. C. W. Stallard were chosen as delegates to the state medical meeting, with Dr. Claude Frazier and Dr. L. G. Houser as alternates. The new officers will be installed for one-year terms at the regular meeting in January.

The scientific program consisted of a discussion of "The Treatment of Fractures," by Dr. C. W. Stallard of the Orthopedic Department of the Montgomery Clinic. The society recorded its opposition to the establishment of free venereal clinics in the county by the county health unit, but advocated the treatment of these patients by their respective family physicians.

Heart Clinics

Under the auspices of the Montgomery Clinic, a series of three heart conferences were held at the Coal Valley Hospital. The subjects for discussion were: November 28, "Diseases of the Heart Muscle"; December 5, "Diseases of the Heart Valves"; December 12, "Clinical Disorders of the Heart-Beat." Patients were used to illustrate various pathological changes, assisted by gross pathological specimens and the projectoscope. Cardiac clinics for the prevention and adequate treatment of heart disease are being planned in the industrial communities in the New River and Kanawha valleys as a result of the interest aroused by the conference. The clinics were attended by physicians from the surrounding communities. G. A. SMITH, *Secretary*.

McDowell County

Dr. D. D. Hatfield, of Yukon, was elected president of the McDowell County Medical Society at its regular monthly meeting, held in the offices of Welch Hospital No. 1 on the evening of December 12. Dr. Hatfield will succeed Dr. S. A. Daniels, of Welch. Dr. W. C. Hall, of Welch, was elected vice-president of the McDowell society, Dr. A. G. Rutherford, secretary, and Dr. H. G. Camper, treasurer.

Other officials of the society named at the December 12 meeting were: Dr. N. H. Tabor, of Crumpler, and Dr. W. L. Peck, of Coalwood, censors; Dr. J. H. Anderson of Hemphill, Dr. S. A. Daniels of Welch, and Dr. A. G. Rutherford of Welch, delegates to the state meeting; and Dr. H. G. Camper of Welch and Dr. R. V. Shanklin of Gary, alternates.

The guest of the evening was Dr. J. C. Robertson, from Mt. Regis Sanitarium, Salem, Va., who read a paper and showed radiographs on "Treatment of Certain Forms of Tuberculosis." This was a most interesting and well presented paper, and a few words in discussion were given by Drs. Camper, Rutherford, and Justo.

The following resolution was offered by Dr. Rutherford, seconded by Dr. Shanklin, and unanimously adopted: "That the McDowell County Medical Society give to the Salvation Army $50." Dr. Camper's statement for the year ending December 12, 1928, showed the society to have a balance of $413.12 on hand.

On motion, the by-laws were set aside and the application of Dr. N. H. Dyer, of Bartley, W. Va., was acted upon, and he was unanimously admitted as a member of the McDowell County Medical Society.

On motion, duly seconded, the treasurer of the society was directed to deposit the sum of $50 on savings account, and at the end of each calendar year, beginning 1929, ten per cent of the net surplus of the McDowell County Medical Society is to be deposited to the credit of this account. The principal and the accrued interest thereon is to be applied for the purchase, or the erection, of a building to be known as the Home of the West Virginia State Medical Association, the same to be located in the city of Charleston. The right is reserved, should necessity demand, to use any part of this money for the proper maintenance of the McDowell County Medical Society.

Dr. N. H. Tabor brought to the attention of the society the present movement intending to introduce a measure before the coming session of the state legislature to consider a change in the present state policy of handling our state hospitals, either abolishing them or changing the work thereof entirely. After an open discussion on the matter the following resolution was unanimously adopted:

"*To the Members of the State Legislature of West Virginia:*

"We, the members of the McDowell County Medical Society, see with disfavor the movement entertained to change the status of the three state institutions known as the Welch Hospital No. 1, McKendree Hospital No. 2, and Fairmont Hospital No. 3, and desire to express our views of opposing any movement that will effect a change in the present management of these three state hospitals, or any other change that will be detrimental to them in any way, since it is our feeling that these institutions are of unquestionable value to the communities in which they are located. It is also our wish that our views in this respect be presented to the press of our state and all the members of our legislature."

To foster our interest in this respect, a committee was then appointed, consisting of three members, Drs. Camper, Daniels, and Stevens.

Dr. Rutherford then announced that the Ladies' Auxiliary was in session in the nurses' home, and that immediately upon adjournment of the business sessions of the McDowell County Medical Society and the Ladies' Auxiliary, Mrs. Rutherford and himself extended invitations to the members of both organizations to adjourn to the reception room of the nurses' home and partake of refreshments. The home was beautifully decorated in the season's colors,

which were also carried out in the refreshments, and a delightful evening was spent by all.

There being no other matter of importance brought up for consideration, the meeting adjourned until January 9, 1929.

A. G. RUTHERFORD, *Secretary.*

Dr. A. G. Rutherford, superintendent of Welch Hospital No. 1, and Dr. H. G. Camper, treasurer of the McDowell County Medical Society, recently returned from a big game hunt into northern Maine. The trip was reported as a great success. During their expedition the two doctors bagged several deer and two bears. Dr. Rutherford is secretary of the McDowell society.

Ohio County

Dr. J. M. T. Finney, of Baltimore, Md., was the essayist at the December 7 meeting of the Ohio County Medical Society, which was held in the Wheeling Elks' Club. Dr. Finney's subject was, "The Human Side of Surgical Practice." His paper was excellently presented and many members of the society took part in the discussion that followed. A buffet lunch was served at the close of the meeting.

Development of the medical and surgical specialists bids fair to sound the death knell of the family physician, according to Dr. Finney. With the rise of the medical scientist, he said, the tendency is for doctors to lose sight of human psychology in the practice of their profession and to consider each case from a cold, scientific point of view. He stated that each doctor should remember that the patient is not interested in whether or not his case is interesting, but only in whether or not he will get well. He advised a little time for reassurance and confidential talks.

Dr. William S. Middleton, of the University of Wisconsin Medical School, Madison, Wisconsin, was the essayist at the December 21 meeting of the Ohio County Medical Society, which was held in the Wheeling Elks' Club. Dr. Middleton presented a most interesting paper on "The Treatment of Lobar Pneumonia." The discussion was led by Dr. John W. Gilmore and Dr. R. J. Snider, both of Wheeling.

H. W. BOND, *Secretary.*

Kanawha County

The annual year-end banquet of the Kanawha Medical Society was held at the Kanawha Country Club, Charleston, on the evening of December 18, with more than seventy members in attendance. Dr. R. H. Walker was elected president of the society and will succeed Dr. W. W. Point, who has served during the past year. Other officers named at the December 17 meeting were: Dr. E. Bennette Henson, first vice-president; Dr. J. G. Preston, second vice-president; and Dr. Russell Kessell, secretary-treasurer. Dr. G. C. Robertson was elected to the board of censors.

The scientific paper of the evening was on the subject, "Evolution of the Present Knowledge of the Treatment of Goiter," by Dr. Stuart McGuire of the McGuire Clinic, Richmond, Va. Dr. McGuire was unable to be present because of an attack of influenza, but his paper was forwarded to Charleston and was presented by Dr. G. H. Barksdale. Those who took part in the discussion were Drs. Robert King Buford, H. L. Robertson, Thomas W. Nale, W. A. McMillan, B. H. Swint, C. A. Ray, O. H. Bobbitt, H. C. Kincaid, R. D. Roller, and Russell Kessell.

A number of business matters were brought up for discussion, including a motion to set aside the sum of $25 to assist in the purchase of equipment for a nurses' training class at the Charleston high school. This motion was voted down when it was pointed out that the memebrs of the Kenewha Medical Society were scattered over the entire county and that many of the members would therefore not care to contribute to an exclusive Charleston project.

The meeting on December 17 was one of the best and most successful sessions of the year.

Dr. Thomas W. Nale, formerly of Pittsburgh, is now located in Charleston and is assisting Dr. W. W. Point in the practice of obstetrics. Dr. Nale was licensed through reciprocity at the November meeting of the state board.

J. R. SHULTZ, *Secretary.*

Raleigh County

Dr. Walter D. Simmons, former secretary of the Raleigh County Medical Society, was elected president for the coming year at the December 13 meeting, held at the Beckley Hotel. Dr. Simmons will succeed Dr. George W. Johnson of McAlpin. Other officers named at the Beckley meeting were: Dr. B. W. Eakin, first vice-president; Dr. A. U. Tieche, second vice-president; and Dr. Ira M. Fisher, of Stotesbury, secretary and treasurer. Drs. George Fordham, J. T. T. Hundley, and E. S. Dupuy were named as the board of censors.

The scientific paper of the evening was presented by Dr. J. T. T. Hundley on the subject, "The Treatment of the Toxemias of Pregnancy." This was a most interesting paper and was discussed by a number of the members present.

Following the meeting, a buffet supper was served and Mrs. R. V. Shanklin, of Gary, president of the Woman's Auxiliary of the West Virginia State Medical Association, addressed the members of the society and the local auxiliary.

WALTER D. SIMMONS, *Secretary*.

Harrison County

The new president for 1929 of the Harrison County Medical Society is Dr. Frank V. Langfitt, of Clarksburg, who was elected at a meeting of the society held at St. Mary's Hospital on the evening of December 6, 1928. Dr. Langfitt will succeed Dr. A. J. Kemper, of Lost Creek.

Other officers named at the December 6 meeting were: Dr. E. A. Hill, vice-president; Dr. B. S. Brake, reëlected secretary; and Dr. E. A. Teets, reëlected treasurer. Dr. V. A. Selby was named as the new member of the board of censors. Delegates to the state meeting at Martinsburg next May will be Dr. J. E. Corbin, Dr. F. V. Langfitt, Dr. R. C. Hood, and Dr. B. S. Brake.

The December 6 meeting was presided over by Dr. Kemper, and the essayist of the evening was Dr. C. C. Romine, of Morgantown, who read a paper on "The Gallbladder and Some of Its Common Diseases." The discussion of Dr. Romine's paper was opened by Dr. H. E. Sloan and Dr. S. L. Cherry, of Clarksburg. Both the paper and the discussions showed that the speakers had an intelligent, comprehensive conception of the subject and the gratifying ability to hold the attention of the audience. From the viewpoint of a program, this meeting was one of the best of the year.

B. S. BRAKE, *Secretary*.

The annual meeting of the Central West Virginia Eye, Ear, Nose and Throat Academy was held recently in Clarksburg, with specialists present from Morgantown, Fairmont, Buckhannon, Weston, and Clarksburg. Dr. C. C. Jarvis, of Clarksburg, was elected as president, and Dr. I. D. Cole, also of Clarksburg, was named as secretary-treasurer.

Dr. A. T. Post was elected president of the Clarksburg Kiwanis Club at the annual election held there last month. He has succeeded Ronald F. Moist, Clarksburg attorney. Dr. Post is chairman of the state Kiwanis committee on under-privileged children.

HOSPITAL NOTES

Huntington City Hospital

The new city hospital of Huntington was opened on November 15, 1928, with a public reception during the afternoon. Actual work at the new hospital got under way on November 16. Dr. Lindsey T. Vinson, Huntington city health officer, is administrative head of the new hospital and will have charge of x-ray work. Dr. R. J. Wilkinson, of the C. & O. Hospital, is chief of staff.

The staff includes the following physicians, who will serve 60-day terms: J. S. Klumpp, Oscar Biern, B. H. Dunham, T. E. Huffman, W. F. Becker, J. E. Hubbard, J. L. Lilly, and J. M. Adams. Mrs. Lottie Anglin McGinnis is superintendent. All charity cases are being handled at the city hospital.

Unique Financial Plan

Lutheran Hospital, Moline, Ill., of which Miss Emelia Dahlgren is superintendent, recently announced in its *Hospital News* a plan of financing which embodies some unusual features.

"Briefly stated," writes Clark G. Anderson, chairman of the board, in the bulletin, "the plan consists of the board asking you to lend the hospital a sum for nineteen years without interest. Instead of interest, the hospital will protect your family or your estate with life insurance so that, should you die before the end of the nineteen years, your family or estate will receive twice the amount you lent the hospital. Should you survive the nineteen years, the full amount of your loan will be returned to you.

"For the sake of convenience we have divided the total amount required into units of $300 each, payable either cash or $25 down and $25 every three months until paid. Each unit represents $600 insurance in one of the strongest insurance companies in the United States. You can buy one unit, or as many as you can afford, and each unit will cost you $300 and represent $600 insurance protection for nineteen years without further cost to you.

"The $300 which you lend the hospital is the same as you would pay the insurance company in premiums on a $600 policy for nineteen years, only you pay it in advance so that the hospital may use it.

The entire transaction is handled through a trust company."—*Hospital Management.*

Blood For Transfusion

In hospitals with large medical services, or in those doing accident work upon a considerable scale, the question of promptly securing a blood donor is often troublesome. The profession of blood-giving has come into existence as the practice of transfusion has increased in popularity. Indeed, in some large cities there are not a few persons who have registered their willingness to sell blood at one or more hospitals. These persons are always required to present serologic evidence of their freedom from disease. Sometimes, particularly in the case of ward patients, where money is not at hand to purchase blood at the current price, it can be secured as a by-product of therapeutic bloodletting in cases of hypertension and other similar conditions. It is a simple problem to Wassermanize such persons, and this transfer of blood "profits both him that gives and him that takes." In cases of polycythemia in the donor (excess of red blood cells), it is the opinion of some physicians that less blood needs to be given than when the donor possesses a normal red-cell count. Often the best method of securing blood is to appeal to the relatives, friends, fellow lodge members, or fellow employees of the patient. It is not usually difficult to obtain blood for a soldier, policeman, or fireman, if the need is made known to others performing the same work. Unfortunately, it is sometimes difficult to obtain the proper type of blood on short notice, and for this reason it is often best, when the need for a transfusion is anticipated, to begin searching for a possible donor before the blood is actually required. However, the process of typing blood is so simple that this procedure need delay the operation hardly at all. In some institutions, a fund is set aside for the purchase of blood at the current price of $25 to $50 for 500 c.c. The social-service department is often useful in quickly finding a blood donor when the need for a transfusion is urgent.—*Modern Hospital.*

PUBLIC HEALTH

Midwife Licenses

Attention has been called by the State Health Commissioner, Dr. W. T. Henshaw, to the fact that all midwives in West Virginia must secure license from the State Health Department before January first if they desire to continue to practice in this state. This is in accordance with a law passed by the legislature in 1925 requiring all persons practicing midwifery in West Virginia and accepting any remuneration for the services rendered to register with the State Department of Health and receive a license.

The registration must be accompanied by the endorsement of a local physician, as no midwife can be licensed except on rceommendation of a local doctor.

Last year 329 midwives were licensed by the State Health Department. These represented every county in the state. By far the largest number of midwives are from rural counties where medical service is hard to obtain. The number of licenses granted last year revealed the fact that a large number of the older women are giving up this profession, as good roads made trained medical service more easily available. However, cases are occasionally reported where, because of isolation or poverty, neither doctor nor midwife is present at the birth of the baby.

The midwife law was passed in 1925 with the hope of raising the standard of those practicing midwifery as well as giving more supervision to this work and so reducing the high maternal and infant death rate in the state. Last year the records show that 246 mothers died in childbirth in West Virginia, 53 less than in 1926, and that 1,724 babies died during the first month of life.

Mortality Statistics

The Department of Commerce announces that the 1927 death rate for West Virginia was 1,002 per 100,000 population as compared with 1,087 in 1926. This decrease in 1927 is largely accounted for by decreases in the death rates from influenza (from 45 to 25 per 100,000 population), pneumonia, all forms (from 83 to 65), diarrhea and enteritis, under two years (from 75 to 60), measles (from 18 to 5), typhoid and paratyphoid fever (from 17 to 13), and tuberculosis, all forms (from 77 to 74).

Increases are shown in 1927 in the death rates from cancer (from 55 in 1926 to 59 per 100,000 population), whooping cough (from 18 to 20), automobile accidents (from 14 to 18), and mine accidents (from 36 to 39).

The estimated population in 1927 was 1,696,000 and in 1926 was 1,669,000.

Inspection of Vaccines

The United States Public Health Service, in connection with its inspection of biologic products as

required by law, performs a service of inestimable value to the general public. Before a biologic product, such as a serum, toxin, vaccine or antitoxin, may be sold in the United States in interstate or international commerce, a license must be obtained from the Public Health Service. The granting of a license means that inspection of the establishment concerned and laboratory examinations of samples of its products are made regularly to insure the observance of safe methods of manufacture, to ascertain freedom from contamination and to determine the purity or safety, or both, of the various products, and the potency in cases where standards exist. From time to time lists of the manufacturing firms which produce such products that are licensed are published, together with the names of the products for which they are licensed. Such a list, recently issued by the Public Health Service, emphasizes the importance of this work.

Training Health Workers

A complete medical course at West Virginia University that will meet the requirements of a Class A medical school, and a training school for public health workers, the latter to be under the supervision and control of the State Health Department, were unanimously endorsed by the West Virginia Public Health Association which recently met in Morgantown.

The need for both of these training centers within the state was voiced in addresses and discussions at the conference. The training of public health workers within the state would assist in filling the ever-increasing demand for trained personnel of this kind and aid in raising the standards in this field.

The conference also recommended that, in view of the health needs of the state and the inadequate funds now provided, the state budget commission and the state legislature be urgently requested to increase the appropriations, which at present are far from sufficient to safeguard the health of the citizens of this state.

The following officers were elected for the coming year: Dr. W. H. McLain, Wheeling, president; Dr. John Thames, Charleston, first vice-president; Dr. Arthur D. Knott, Parkersburg, second vice-president; Dr. D. Littlejohn, Charleston, secretary and treasurer. Dr. W. T. Henshaw, state health commissioner, was elected as representative on the governing council of the American Public Health Association.

Ringworm of Hands and Feet

Recently it has been pointed out by Surgeon General H. S. Cumming, of the United States Public Health Service, that within the past few years, throughout the whole United States, many persons have been affected with an eruption of the hands and feet that is most marked during the hot weather. Information is slowly spreading among the public that, in many instances, this trouble is due to infection with a ringworm parasite. Medical knowledge of ringworm of the hands and feet is comparatively recent.

The disease is remarkable frequent, and it is probable that at least one-half of all adults suffer from it at some time. In the University of Pennsylvania a careful survey of all students showed that over 60 per cent were affected with the ringworm organism. This work was definitely proven, and not mere clinical diagnosis, for organisms were found in all cases. It is met with in every part of the country and is more frequent in the south than in the drier and colder climates.

It is said that in the Gulf stats practically the entire population has had the disease at some period.

Almost every one who uses a swimming pool, a golf club, an athletic club or any place where there is a common dressing room has the infection upon his feet. It is highly probable that the development of club life, the great increase in the number of swimming pools, and probably the general tendency of the American public to spend a certain amount of time in hotels, is largely responsible for the increase in this disease.

Ringworm of the hands and feet is caused by a vegetable parasite which is a distant cousin of the well-known mould that grows upon stale bread. In addition to living upon the human body, it can probably live and grow elsewhere, and can resist drying for a long time. In fact, it is a remarkably resistant organism, for it takes at least fifteen minutes of boiling to kill one. There are a number of varieties of ringworm parasite, and it is highly probable that some are much more difficult to cure than are others. Unfortunately, at the present time, more exact knowledge on this point is needed.

Any type of person can be affected, whether well or ill. Food has nothing to do with the disease. Even acidosis can hardly be credited to be the cause. Any occupation that entails long-continued heating of the feet may be a predisposing cause or may aggravate an attack. Hot floors are bad. Feet should not be kept upon a radiator.

Symptoms of Croup

An interesting statement by the United States Public Health Service in regard to the severe symptoms of croup has recently been released to a number of lay publications and will be of some little interest to the members of the profession. It is pointed out in the statement that there are several other derangements with symptoms of croup, but of far graver consequences. Consequently, it is unfortunate that the medical profession sometimes uses the term "croup" to describe these other ailments. The text of the statement follows in part:

With the general public the word "croup" usually brings to mind a simple disease of childhood entailing no risk to life and practically no hazard to the future health of the child. Since this is true, it is rather unfortunate that the medical profession sometimes uses the same term to describe conditions having the symptoms of croup but of far more serious consequences. Membraneous croup, for example, means diphtheria of the throat, and it would be much safer for all concerned if that condition were called diphtheria. The use of the term "croup" in that connection tends to give a sense of false security to the lay friends and relatives of the patient.

As a complication or sequel of certain diseases, such as influenza, bronchitis, scarlet fever, or bronchial pneumonia, a croup-like condition sometimes arises which, in the case of very young children, may prove to be a menace to life. A few fatal cases of this type of croup have been reported.

Occasionally a child may be thought to have an attack of ordinary spasmodic croup when in reality there is a foreign body in the throat. A case of apparent croup which does not yield to the usual time should be investigated to determine whether the child has swallowed or inhaled some object a short time before the attack.

The usual simple form of croup, with which a certain number of mothers of each generation are painfully familiar, is due to functional spasm of the muscles of the throat. There is nothing organically wrong with the child, nor is the condition due to an infection. In a child predisposed to spasmodic croup, a very slight cause will sometimes bring on a spasm of the muscles of the throat, and a full-fledged attack of croup results.

The disease is common in children from one to five years of age, and especially so up to the end of the third year. It is comparatively rare under one year of age, but occurs to a considerable extent in the early school ages.

In studies made by the United States Public Health Service in a typical small-sized city, it was found that the rate for croup under one year of age was 5.6 per 1,000 persons. From one to four years the rate was 21.1, and from five to nine it was 20.9. After the age of eight there is a rapid fall in the number of cases of croup recorded, and few mothers of children past ten years of age need fear the sleepless nights which must often be spent in bringing relief to a child in the throes of croup.

In the period from December, 1921, to May, 1923, there were 291½ days lost from croup by children under 10 years of age in the schools of a city where special studies were made. One-tenth of one per cent of all days lost from sickness in this period was lost from croup. It is evident, therefore, that we can not entirely dismiss the subject of croup after the age of five, though it is undoubtedly more common in the younger children.

The children rather more prone to attacks of croup are those who are well nourished or fat. The mothers of plump little boys and girls have more to fear from croup than have the unfortunate parents of poorly nourished, delicate children. Croup seems to aim at the finest targets; but, after all, it does little damage when it strikes.

There is probably no other disease of childhood in which the severity of the symptoms is so far out of proportion to the seriousness of the condition. Few things are more alarming to the young mother with her first baby than the child's first attack of croup. In many cases the little one has seemed quite well all day and played around as usual. He is put to bed at the usual hour and goes to sleep. Several hours later—often around midnight—he awakens suddenly with a harsh, metallic cough, husky voice, and some difficulty in breathing. In severe cases this difficulty is sometimes so great that the child's face becomes congested or even pale and cyanotic or blue. The distress may be great, and there is marked restlessness.

In true spasmodic croup the voice is rarely lost completely, and though the pulse is rapid, the temperature is but slightly elevated, if at all.

The alarming symptoms and the psychological effect of the apprehension naturally associated with an acute illness occurring in the late hours of the night make it hard for the young mother to believe that her child is not critically ill. But croup is not a fatal disease. After a few hours the symptoms subside and the child falls asleep. The next day he may seem perfectly well except, perhaps, for a slight

hoarseness or an occasional cough. There is a tendency for these attacks to recur for three or four nights in succession unless proper care and treatment are given.

In some instances the attacks are preceded by hoarseness or symptoms of a slight cold in the afternoon, but the full-fledged attack does not develop until after the child has gone to sleep at night.

In an acute attack, anything which will cause the muscles of the throat to relax the spasm which is at the root of the trouble will bring about improvement. A simple emetic (such as warm salt-water) to cause vomiting is usually followed by relief. The inhaling of steam is helpful. This may be accomplished by placing the child in a closed tent and introducing steam from a croup kettle. Hot fomentations—that is, cloths dipped in hot water and applied to the throat—are also useful. Some authorities state that a very satisfactory mode of treatment is to place the child in a hot bath.

The day following an attack the patient should be kept in a warm room and such treatment given as has been prescribed by the physician.

Pellagra and Black Tongue

The results of an important series of studies made by Dr. Joseph Goldberger and his associates, of the United States Public Health Service, have recently been published, which indicate that black tongue, a disease of dogs, and pellagra, a disease of man, are practically identical. In connection with such studies an interesting investigation has been made of the pellagra-preventing properties of 16 foods. These foods are maize, wheat germ, cowpea, soybean, milk, butter, cod-liver oil, cottonseed oil, lean beef, pork liver, salmon, egg yolk, tomatoes, carrots, and rutabagas.

It seems clearly indicated that, so far as the studies have been conducted, the foodstuffs that appear to be good sources of the black-tongue preventative also appear to be good sources of the pellagra preventative; those that appear to be poor sources of, or lacking in, the black-tongue preventative, likewise appear as poor sources of, or lacking in, the pellagra preventative. This, it should be noted, is not a mere similarity in distribution of the respective preventative essentials among the foodstuffs; it is a similarity in the potency of the action of these foodstuffs in the respective diseased conditions, and, thus, it would seem to constitute evidence of weight pointing to the identity of the preventative essentials and therefore to the identity of black-tongue and pellagra.

The pellagra-preventing vitamin is believed to be present in nearly, if not quite, all natural foods except the oils and fats, but in very greatly varying amounts. Thus there is very little in cornmeal, white flour, or rice; somewhat more in wheat middlings, and a great deal in lean meat and powdered yeast. Unfortunately, it is not yet known just how much each food contains nor how much the body must have for the maintenance of health. In considering prevention and treatment it is, therefore, necessary to proceed on general principles, guided by such knowledge of relative values as we already have.

Powdered Yeast.—Dried, pure yeast is the richest "P-P" (pellagra preventative) containing food at present known. It is also very rich in protein and in the beriberi-preventing vitamin, so that it should rate high as a food. This yeast is a microscopic plant cell used in baking and brewing. For use as a food the yeast plant should preferably be dead. In the home it may readily be killed by stirring the dry powder into some water and then boiling for about one minute. In the adult, 1 ounce a day (or two teaspoonfuls three times a day) of the pure powdered yeast will of itself suffice to prevent pellagra. It may be taken in any way that is most convenient, as, for example, in water, in milk, in tomato juice, in syrup, or in molasses.

FROM OTHER JOURNALS

Faith Healing

Widespread attention has been directed to the report from the Joint Commission of Bishops and Deputies to the General Convention of the Protestant Episcopal Church, held in Washington, D. C., the latter part of October, on the subject of "Christian Healing." The report is the result of a commission appointed at the 1295 convention and instructed to report at the 1928 convention.

According to newspaper accounts of that commission report, the introduction reads as follows:

"Your joint commission has spent the past three years investigating the work being done by clergy who have made Christian healing part of their regular parochial work. Members of the commission have held numerous conferences with both clergy and laity to learn their attitude toward the principles upon which the practice of Christian healing is believed to rest."

According to one summary published from that

report, data relating to the question had been gathered from many sources, such as:

"The personal experience of members of the commission;

"The experience of other persons having immediate contact with this work;

"The results of the work of the two societies whose entire time is devoted to teaching and practicing the principles of Christian healing;

"The work being done at Grace Cathedral in San Francisco;

"The work being done by clergy and others belonging to churches other than our town;

"The experience of missionaries and native Christians in foreign fields."

Also, according to published accounts, the Joint Commission report contained the following:

"Your commission does not in this report attempt to present in detail the actual experiences above referred to. These vary from the testimony of first-hand experiences of physicians and surgeons and neurologists, on the one hand, to the testimony of many parish priests, as well as the hearsay testimony of persons of unquestioned veracity, on the other;

"That the power of faith to produce such results is capable of being demonstrated empirically if not scientifically;

"That the distinction or difference between what is pure matter and what is pure spirit is no longer as simply demonstrated as was formerly believed;

"That the popular attitude toward misfortune in all its forms as being a visitation by God for punishment for sin is no longer a universal belief, but is rapidly being displaced by a belief that such misfortunes are man-induced conditions which are hindrances to God's will."

The Associated Press, in its dispatches relating to that convention, declared that "the conviction was stated that all faith healing should be carried on in close coöperation with medical science." Although the conclusions as published were: "That throughout the world spiritual healing is no longer the hope of a few but the belief and practice of a large and rapidly increasing number of persons. That such healing is an experience of mankind that can no longer be questioned."

There can be no reasonable question but what the "mental attitude" of a patient may have much to do with his desire and determination to recover from a serious illness. However, just as mental attitude, "mental error," or even faith can not create disease, so it can not abolish physical or even mental diseases. A proper spiritual attitude can not help but be beneficial to a physician who serves his patients with a reverence for the forces of God. In like manner, a spiritual and reverential attitude on the part of the patient is desired, but to assume that faith or religion even in a small measure can be a substitute for definite medical sciences is fallacious. Too many instances have been recorded where religious zealots neglected and ignored physical conditions such as cancer, tuberculosis, diabetes, and Bright's disease until even their own "faith" could not prevent them from suffering a painful and early death.

Religious faith can not make an individual immune from diphtheria, smallpox, typhoid fever, or any other communicable disease. Neither can faith alone benefit or cure those conditions. Thus, too great reliance upon the tenets of "Christian healing" would be a sad and disastrous result. Faith healing, mysticism, charms and superstitions in and by themselves are fads and fallacies.—*Ohio State Medical Journal.*

Medicinal Prohibition

The *Chicago Tribune* has little sympathy with Mr. Volstead as a physician; in fact, it considers him as a downright fraud as a practitioner of medicine.

Here is what the *Tribune* says:

"The law enters the sick room with the doctor, takes the medicine, a medicine dropper, and a spoon, and measures out what the patient is to have. If the doctor disagrees, he'll have to bootleg the remainder to the patient.

"The requirements of hospitals and of sick rooms have no appeal to prohibitionists. They are concerned only with the personal habits of people able to take care of themselves and, rather than that a man should get a pint as a beverage, they would sacrifice the sick.

"The restriction on whiskey as prescribed by physicians should be taken out of the Volstead act in common decency and the medicinal use of any form of alcohol should be granted.

"Savagery in prohibition has been progressive. It has been injected into statutes and into regulations, into the practices of enforcement units and the demands of professional prohibitionists. It has considered none of the old protections of life and property. It regards assassination lightly, liberty as nothing, and property negligible. It would padlock

a sick room as readily as a roadhouse, and treat a dying man as a drunken bum."—*Illinois. Medical Journal.*

Ingratitude

The ingratitude of the public is notorious, not that the individuals who make up the public do not appreciate a service rendered them, but that the public knows so little of the benefits so often bestowed upon its component individuals by the workers who devote their lives to its interests in the obscurity of the laboratory. A pitiful case of this type has recently been reported in the daily papers. Sir Ronald Ross, one of those who were responsible for the discovery that malaria is carried by the mosquito, at the age of 71 years, seriously ill, was found to be "close to want in a tiny flat" in London. His papers, representing the work of his lifetime, were purchased by Lady Houston and his distress was thus relieved. His only public reward had been the conferring of his title. Contrast this with the annuity granted Dr. Banting by the government of Canada for his discovery of insulin. The public is slowly coming to recognize the value of the scientist.—*Pennsylvania Medical Journal.*

Intussusception of the Bowel into the Stomach After Gastroenterostomy

Gastroenterostomy has been used for nearly fifty years in the treatment of peptic ulcer. It is fortunate that the serious complication described in this issue of the Journal is so rare; only 15 previous cases were found in the literature and only one previous similar case has been reported in this country. The condition presents an unhappy combination in which early diagnosis is the only way to save the patient's life and in which the diagnosis in the past has usually been wrong.

The condition usually develops years after the operation and its etiology is somewhat obscure. Peristalsis in the small intestine is normally downward and descending invagination is easy to understand. In most of the reported cases the intussusception was ascending or retrograde in the jejunum and probably began well below the gastroenterostomy opening and the passage of the jejunum into the stomach was a late stage of the process. It is conceivable that the cause of such an ascending invagination may be found in spasm or contraction of the duodenum or jejunum due to irritation associated with vomiting and reversed peristalsis.

The prominent symptoms are epigastric pain and hematemesis; occasionally an epigastric tumor may be felt. The röntgen examination in one case gave a striking and characteristic picture.

The difficulties in diagnosis are considerable. The condition is so rare and almost unheard of that it is not even considered in diagnosis. The combination of hematemesis and intestinal obstruction is unusual and misleading. If a patient who has had a previous ulcer vomits blood, we naturally think of a recurrence of the ulcer. The abdominal tumor may be missed because of a natural desire to let a vomiting, bleeding patient alone for a few days.

The patient's life depends, however, on an early recognition of the actual condition, or at least on the discovery of high intestinal obstruction. To simply diagnose some type of gastric hemorrhage and to treat it medically has proved invariably fatal. The mortality in the whole reported group has been 50 per cent, and all those not operated upon have died.

The authors suggest as aids in diagnosis *to remember the possibility* of this rare condition, to look carefully for abdominal tumor in spite of the presence of bleeding, to consider the type of vomiting and perhaps to use the röntgen ray.—*The New England Journal of Medicine.*

The Press and Medical News

The influence of the press upon the public mind is never greater than when medical subjects are published. There are those whose belief in the news reports is so strong that nothing can shake their immutability; thus, given the receptive mind and given its proper object, the natural result is a fixation which can not be jarred by even the most evident of contrary facts.

The influence of the press in molding public opinion creates a responsibility to the public which it can not avoid if it would. Nothing is more sacred than the responsibility arising out of profound trust and sincere belief. This trust in some one or some thing is, after all, the motive force which governs the actions of members of society. A failure on the part of the press to recognize its responsibilities in this direction renders it liable to severe criticism, not to say condemnation.

Medical facts come under the head of news, and as such must be reported to the public. The eager, unthinking public, ever ready to seize upon new suggestions, is particularly impressed by the new in medicine. The truth or falsity of a claim is rarely considered by these avid ones, who are content that it wear the shining crown of novelty. They swallow

and assimilate with little conscious effort this great bolus of medical food. There is never the slightest suggestion of a dysphagia.

To protect these earnest souls from their own credulity, to save them from the pursuit of a fanciful, ephemeral medical idea, to make them more careful in their selection and ingestion of medical food, and, last but not least, to protect the physician from the onslaught of these factual minds, who would know the truth hidden away in the core of this new idea, would know the clinical application of the discovery and would particularly know whether or not it can be applied in their own family or their own cases, we would suggest that the press publish, in addition to the news item, an editorial comment describing the true status of any medical discovery.

The simplicity of this is obvious; the value would be widespread, and the item would lose none of its news value. Proper coöperation between medical societies and the press would result in the securing by the press of satisfactory and adequate information. Reliable sources should be used by those in charge of newspapers to the end that the truth of modern medical thought might be disseminated instead of a garbled report, or only the half truth, which may do incalculable harm. Editorial comment would then become a force for good in the community and the much-harassed physicians perhaps saved for other purposes than to answer questions engendered by incomplete and at times totally fallacious news reports.

A start in this direction has been made by some of the newspapers in St. Louis, which have been coöperating with the medical society to publish reliable editorial comments. We have no doubt that this is also being done in other communities; however, we feel that it should become general, and it is with the hope that we can stimulate interest in this subject among the newspapers and among the medical organizations that we comment upon it at this time.—*Missouri Medical Journal.*

Right of Osteopath to Administer Drugs

(State Board of Medical Examiners *vs.* Baudendistel (N. J.), 140 A. 886.)

The defendant, Baudendistel, was convicted in the first district court of New Jersey on a complaint charging him with a violation of the state medical practice act. He appealed to the supreme court of New Jersey. The evidence in the case established the facts that the defendant held licenses to practice osteopathy and chiropractic; that he displayed a sign in his office window which read: "Dr. Chas. Baudendistel"; that on numerous occasions he had treated persons who came to him for medical treatment by giving them medicines to effect a cure for the ailments of which they complained. The defendant contended that the practice of osteopathy was expressly excluded from the application of the prohibitory provisions of the medical practice act, and that, since he had a license to practice osteopathy, the acts complained of did not constitute a violation of the medical practice act. The supreme court, however, in affirming the judgment of the district court, held that the practice of osteopathy was confined to the manipulation of the human body by applying the hands only to the body of the patient, citing State *vs.* Herring, 70 N. J. Law 34, 56 A. 670, 1 Ann. Cas. 51.—*Journal A. M. A.*, December 8, 1928.

Calmette's Statistics

If the enthusiasm with which Calmette's announcement that he had successfully solved the problem of preventing tuberculosis in newly born infants by feeding them an attenuated form of living tubercle bacilli had been the same in all countries as it was in France, the probability is that a considerable number of vaccinations would be available at the present time from which we could determine its true value. This, however, is not the case. Those who read Calmette's first communication were impressed with the fact that he handled carelessly the available statistics concerning the mortality rate from tuberculosis in nonvaccinated children exposed to contagion, or that his interpretation varied considerably from those of others to whom the same fiures were available.

For this reason his method of vaccinating young infants against tuberculosis with what he has chosen to call the *Bacillus Calmette-Guérin* was received with some skepticism. No one questioned his honesty but they merely demanded further evidence to assure themselves that the feeding of a pure culture of tubercle bacilli to newly born babies was a perfectly safe procedure.

The statistics which Calmette presented in support of his preventive measure seemed to be the main foundation for his assertion. It was a perfectly natural sequence, therefore, that these statistics be subjected to close scrutiny. As a result of this diligent inquiry a number of observers pointed out the fact that they were not altogether sound. Greenwood put it, "He has introduced a novel method into

statistics." In view of the fact that Doctor Greenwood is professor of epidemiology and vital statistics in the University of London, his comment attracts more than ordinary attention. Rosenfeld, in Germany, independently reached the same conclusions and pointed out other statistical errors made by Calmette. Then Petroff and Branch made a very careful analytical study at the Research and Clinical Laboratory of the Trudeau Sanatorium in New York State, in which they corroborated the fact that skepticism seems to be justified.—*International Medical Digest.*

GENERAL NEWS

Dr. Hall Assumes Presidency

Finis has just been written at the end of the sixty-first chapter of the history of the West Virginia State Medical Association, a chapter devoted to the year

Dr. C. A. Ray, of Charleston, retiring president of the association.

1928 and featured by the direction and management of Dr. C. A. Ray of Charleston, the retiring president. A new chapter is about to start, and a new helmsman, Dr. Harry M. Hall of Wheeling, is about to take over the reins of office. An eventful year has closed and a year of promise is beckoning to the followers of the profession of medicine in West Virginia.

In stepping down from the highest office within the gift of the association, Dr. Ray leaves behind him a record that will feel at home in the files of the past

Dr. Harry M. Hall, of Wheeling, who assumed the duties of president on the first day of January.

presidents. During his term of office the membership has increased, the profession has been drawn closer together, past difficulties and misunderstandings have been ironed out, the journal has improved, and the finances of both the journal and the association have been placed upon a sound and staunch foundation.

Dr. Hall, of Wheeling, is well qualified to take over the office of president of the association. He has served as the head of the Ohio County Medical Society and of the Ohio Valley General Hospital. He has long been an active worker in the association and is familiar with is problems and its structure. Dr. Hall will give his best efforts in promoting the affairs of the association. His administration gives promise of another highly successful year.

Annual Meeting of the Hospital Association of West Virginia

On December the third the West Virginia Hospital Association convened in Charleston for its third annual meeting. It was hard to believe that this was only the third meeting, so well organized was the association, representing twenty-three of the forty-nine hospitals, with papers and discussions commendable to an institution many years older. The only regret is that not more of the hospitals of the state are taking part in an association which promises to be of great value in the medical economics of this state.

In the address of welcome, Mayor Wertz commented on the advance hospitals have made during the past few years. Could he but realize that this advance has been due to coöperation and hard work on the part of the profession to give to the layman all that science has made possible, that the passing of the "boarding house" type hospital was not without great struggle, his surprise would probably be unlimited.

Doctor Harry M. Hall's paper on "The Relation of the Hospital Staff to the Superintendent and Management" was truly a masterpiece, and I beg you to read it either in this journal or in *Hospital Management*, Chicago. Doctor Hall pointed out many of the causes for failure in management as being due to lack of coöperation and understanding on the part of the staff and superintendent. As a solution he suggested two remedies—one, the appointment of a committee from the staff to act for the staff in all matters pertaining to the management, and, second, the instituting of a course at our state university for training men and women as hospital executives.

The trained nurse has been the subject of much discussion during the past few years. Hospitals have been trying to solve the problems on the one side, and the nurses' association on the other. It was voted to seek closer coöperation with the nurses' association and thus solve these problems so as to meet with the approval of all.

The greater part of the afternoon session was spent with the Hon. C. L. Heaberlin, workmen's compensation commissioner of West Virginia. The commissioner pleaded for a more complete study of the injured; to accept a patient not as an injured patient alone, but as a sick man, and treat him from all angles, making, if necessary, the injury secondary. This will reduce the number of permanent disabilities that now drain compensation. He assured the hospitals and the medical profession that the aim of the department was coöperation, but the department must have coöperation in return. He stressed the importance of complete reports and cited cases where embarrassment could have been avoided had such been the case.

Doctor R. H. Walker, of Charleston, presented slides to show disabilities occurring from improperly treated cases. Some of these disabilities were due to the lack of proper x-ray of the patient, or neglect to give the patient complete examination. He pointed out that there is no excuse for this type of disability.

Doctor Charles E. Holzer presented a budget system which is at present functioning in his hospital in Gallipolis, Ohio. In the main it was technical and I shall not attempt to discuss it here, but refer all hospital superintendents to him, for I am positive he can assist in reducing your overhead.

Doctor R. A. Ireland, as usual, presented some ideas worthy of consideration, in the way of better legislation. A home for the incurables; a hospital for crippled children; automobile insurance to protect the hospital and physician in the treatment of injuries due to accident. This last possible law should demand the attention of every practicing physician in West Virginia. If something isn't done soon to protect our interests we will be begging at the "poorhouse door."

There were several speakers at the banquet, but the outstanding one was Mr. Matthew O. Foley, of Chicago. He spoke on "The Value of the Hospital to the Community." The hospitals save this state ninety million dollars annually, without one cent of cost to the state, by saving the lives of fifteen thousand men, women and children who would otherwise die were it not for these institutions. This is based on the fact that one out of every ten patients admitted to hospitals are actually saved by proper hospitalization, valuing the life at six thousand five hundred dollars.

In closing, may I voice the sentiments of those present? We want every hospital in West Virginia enrolled in our association. Thus can we accomplish much that will be of mutual benefit.

B. I. GOLDEN, M.D., Elkins, W. Va.

Physicians Licensed

Eleven physicians passed the state medical examination given in Morgantown November 27 and 28 under the direction of the public health council and were licensed to practice medicine in the state. At the same time, eight physicians who had passed med-

LIBRARY OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA

ical examinations in other states were licensed to practice in West Virginia by a reciprocity agreement.

The eleven physicians who passed the examination at Morgantown were:

Laban Phelps Stanley, of Charleston; Filberto A. Bonaventura, of Follansbee; John J. Faust, of Richwood; Creed C. Greer, of Baltimore; Arthur L. Osterman, of Wheeling; George A. Duncan, of Clarksburg; Anthony Purpura, of Wheeling; Harry A. Azar, of Sistersville; Brayton O. Myers, of Matoaka; James E. Fisher, of New Cumberland, and James W. Calvert, of Dayton, Ohio.

The physicians who were granted reciprocity licenses, the state by which they were originally licensed, and their location in West Virginia, are:

Stanley J. Skarzinski, Maryland, Fairmont; Wilbur E. Gattans, Maryland, Huntington; Frank Lee South, Illinois, Morgantown; Ralph H. Zemer, Ohio, Colliers; Albert M. Price, Kentucky, Madison; Thomas W. Nale, Pennsylvania, Charleston; Arnold L. Jensen, Maryland, Richwood, and Harry W. Rollings, District of Columbia, Lost City, Hardy county.

Southern Surgical Elects

Dr. Lucius E. Burch, of Nashville, Tenn., was elected president of the Southern Surgical Association at the annual meeting of that organization held on December 11-13 at White Sulphur Springs. The 1929 session will be held at Savannah, Ga. Dr. Burch will succeed Dr. Arthur C. Scott, of Temple, Texas. Vice-presidents elected at the White Sulphur meeting were Dr. Albert O. Singleton, of Galveston, Texas, and Dr. Fred Bailey, of St. Louis, Mo.

Correction

We wish to state that, due to a misunderstanding, the article entitled "Congenital Hypertrophic Pyloric Stenosis," by Dr. J. T. Thornton, of Wheeling, which was published in the December issue of the JOURNAL, was published without correction of the proofs. As a result, a number of errors appeared. The corrected article will be found complete in the author's reprints.

Ireland Heads State Hospitals

Dr. R. A. Ireland, of the Mountain State Hospital, Charleston, was named as president of the Hospital Association of West Virginia at the annual meeting of that organization held in Charleston on December third. Dr. Ireland succeeded Dr. L. W. Lawson, of Logan, who served during 1928. Mr. J. Stanley Turk, of the Ohio Valley General Hospital, Wheeling, was named as president-elect and will take office at the expiration of Dr. Ireland's term.

Other officers named at the December third meeting were Dr. B. I. Golden, of the Davis Memorial Hospital, Elkins, first vice-president; Dr. Walter E. Vest, of the Chesapeake and Ohio Hospital, Huntington, second vice-president; and Mr. Joe W. Savage, of Charleston, secretary-treasurer. Committee appointments have not yet been made by the new president.

A complete report of the hospital meeting will be found elsewhere in this issue, giving the program and discussion in detail.

Legislative Problems of the Hospital Association of West Virginia*

By R. A. IRELAND, M.D., *President*
Charleston, W. Va.

The Hospital Association of West Virginia has increased in size and has increased in usefulness since its rebirth three years ago. Much work has been done, and there remains much work to do to bring into active membership most of the remaining hospitals of the state. We now have a large majority of the more active hospitals, but we should have all of the active ones. In union there is strength. In discussing our common problems, and working in harmony, we will be able to give better service in our individual hospitals at a reduced cost. The high cost of care in sickness is a serious problem for our population, except to the very rich.

Recently my attention was called to the case of a poor workman who had saved $1,100 to buy a little home. His wife became ill in a city in West Virginia, was hurried to a hospital and her appendix removed before she or her husband fully realized that large obligations were being incurred. The husband, being unsophisticated, let it be known that he had $1,100 in the bank, and before he could get his wife out of the hospital the officials of that hospital had managed to itemize a bill that equaled his bank account. As a result of this short-sighted policy the family under discussion has lived in extreme poverty for these two or three years since that unfortunate incident. This case is described in this length to impress upon you the results that may

* Read before their third annual meeting in Charleston, December 3, 1928.

follow the application of our hospital rates to some of our patients who can ill afford such items of expense.

It is my desire to bring up in the minds of those interested a consideration of the matter of coöperative buying. A system of coöperative buying has been successfully in vogue for a number of years in New York and Cleveland. I had the privilege, two years ago, of studying in some detail the central office that handled the matter of purchasing of supplies for the associated hospitals of Cleveland, and it is a revelation to see that they are able to reduce their expenses in a substantial manner. This principle is the same as that which makes possible the large profits that are known to be realized in the operation of various types of chain stores. The further discussion of this question of policy may be taken up by individual hospitals in a central office in Charleston.

There is need for improvement in the scientific work done in a majority of the hospitals of West Virginia. Proof of that statement was amply demonstrated by Dr. R. H. Walker, who is chief of the medical service of the state compensation department. The x-ray records that have been shown are startling in their revelations. The average efficiency of the work done in the hospitals of West Virginia must be brought to a higher grade. No intention is made in this statement to compare our hospitals unfavorably with hospitals in other sections of the country, but that does not mitigate against the proof we have before us, that our work must be improved. At this point I desire to put in a plea for more consideration of the work done by the internal medicine men in our hospitals. There has been somewhat of a tendency to put too much stress and attach too much importance in many hospitals to the surgical work and the surgical department.

Another point that needs to be discussed and improvement registered is in the matter of better intern service. The West Virginia State Medical Association has gone on record as being in favor of the law requiring each applicant for license to practice medicine to present evidence that he has had at least one year's service in a recognized hospital before being permitted to take an examination for the privilege of practice. If this rule were in operation it would be to the advantage of the hospitals. It might work some disadvantage to certain rural sections of the state which have been reported as suffering because of the need of rural physicians.

The West Virginia State Medical Association passed a resolution favoring the revision of the law pertaining to the State Board of Nurses' Examiners. The doctors desired that there should be three doctors actively connected with a recognized hospital on this board of examiners, and that there should be two graduate nurses on this board. The State Nurses' Association desires the law to remain as it is.

The nurses desire a larger appropriation from the state for extension work. This means that they desire to have a representative who will go to the high schools of our state and describe to the students something of the character of the work done in the hospital training schools. They also desire a full-time secretary with an office in the state house.

It is my intention to again present to our legislative session this winter an act giving the hospitals the same protection for bed and board that is now extended to hotels.

It is my intention, also, to present to the legislature an act that will put in operation some sort of insurance protection covering every automobile operator in our state. This provision will carry with it a protection that would become automatic in every accident case that is presented to a hospital or to a doctor when, and if, that accident has been in connection with the operation of an automobile.

Finally, it is my intention to present to our legislature, if some one with a better mind does not present a similar bill, an act that will provide some sort of protection and training for mentally defective children in the state of West Virginia, and in this same act there will be an attempt to provide better servcie for the crippled children of our state.

It is our belief that there are too many laws on our statute books now, and it will be our attempt to centralize our work upon a few very important items that are essential to the best interests of the Hospital Association of West Virginia.

Right to Revoke Physician's License is Challenged

The right of a state board of medical examiners to revoke the license of a practicing physician because he has been convicted of a crime involving moral turpitude, for which he has been pardoned, and because he published and circulated an advertisement relative to diseases, was considered in the supreme court of the United States on October 22.

The cases presenting this question are those of Talbert W. Hughes *vs.* State Board of Medical Examiners, No. 110, and Nathan A. Hughes *vs.* State Board of Medical Examiners, No. 111.

The plaintiffs in error were convicted upon indictments which charged them with the offense of using the United States mails in furtherance of a scheme to defraud. Pardons were granted to both plaintiffs in error on August 29, 1921, on this charge.

The State Board of Medical Examiners, acting in pursuance of the Georgia Act of 1913 and the Act of 1918, gave the plaintiffs in error due notice of a hearing upon the charges and, upon a hearing, the licenses of both were revoked.

It was contended for the plaintiffs in error that the effect of the pardon was to prevent the penalties and disabilities consequent upon the conviction so that in the eyes of the law a person is as innocent of the crime as if it had never been committed by him. If the pardon had been granted to plaintiff in error on August 21, 1921, counsel declared, there can have rested against them no imputation in connection with the offense at the time of preferring the charges against them by the State Board in January, 1924.

The Acts of 1913 and 1918 are unconstitutional and in violation of the Fourteenth Amendment of the Federal Constitution, it was argued. The part of the acts which provides for the revocation of a license for the publication and circulation of advertisements relative to diseases is discriminatory, since it applies only to physicians, counsel added.

The court declined to hear argument for the defendant in error.

The brief of the defendants in error maintains that disabilities which have accrued to individuals as a result of a conviction of a crime are not affected by the subsequent pardon of that crime. The brief further states that there is no right to practice medicine which is not subordinate to the police power of the states.

George P. Whitman (formerly I. Miller and George C. Spencer with him on the brief) argued for the plaintiffs in error. J. Z. Foster filed briefs for the defendants in error.—*United States Daily.*

Influenza Spread

The epidemic of influenza that had its inception in western United States is rapidly spreading throughout most of the country, but has subsided in the states where it originated, it was stated December 19 by the surgeon general, Dr. Hugh S. Cumming, of the Public Health Service.

Complete reports from 42 states, for the week ended December 15, show a total of 41,000 cases for the week immediately preceding. The Public Health Service estimates, Dr. Cumming said, that there are in the neighborhood of 600,000 new cases for the December 15 week, because past experiences have shown that only about one-fifth of the actual number of cases are reported.

"The peak of the disease evidently has passed in California, Montana, and Colorado, the states in which the present epidemic obtained its foothold," said the surgeon general. "It appears that the peak of the disease in given communities will take from three to six weeks to get through," he added.

In California only 6,655 cases were reported for the week ended December 15, as against 10,296 reported during the preceding week. In Montana there were 3,060 cases for the December 15 week as against 4,590 in the preceding week, and for Colorado, 1,146 as compared to 1,936.

Kansas reported the largest number of new cases for the week ended December 15, 68,843, as against 13,596 for the week ended December 8. Other states reporting increases were:

Indiana, 2,280, as compared to 87; Illinois, 2,196 and 97; Wisconsin, 583 and 107; Michigan, 244 and 6; Minnesota, 1,238 and 4; Missouri, 11,683 and 140; North Dakota, 11,693 and 194; Nebraska, 2,590 and 364.

South Carolina, 8,912 and 5,145; Georgia, 4,462 and 990; Kentucky, 3,946 and 4; Tennessee, 6,612 and 222; Mississippi, 2,038 and 0.

Arizona, 2,615 and 1,100; New Mexico, 1,757 and 170; Utah, 224 and 96; Washington, 407 and 22; Oregon, 1,851 and 1,466; Ohio, 718 and 45; Louisiana, 136 and 36.

The other states reported each fewer than 100 new cases for the December 15 week. Six states, including New York, did not report influenza statistics.

"Distribution of information regarding the prevalence of influenza throughout the country and suggestions to state and local health officers, upon request, appears to be all that is necessary for the Public Health Service to do at the present time," Dr. Cumming said.

"The disease, although admittedly widespread, is not of the virulent type, such as was the 1918 epidemic which took some half-million lives, and therefore is less difficult to cope with from the public health standpoint."

Dr. Cumming emphasized, however, that every effort is being made and every precaution is being taken by Federal, state and local health authorities to

prevent undue spread of the respiratory ailment, but because of its faculty of spreading in a "lightning-like" manner, control of the disease is extremely difficult.

New and Non-Official Remedies

The following articles have been accepted by the Council on Pharmacy and Chemistry:

ABBOTT LABORATORIES — Capsules Ephedrine Hydrochloride-Abbott, 3/8 grain.

LEDERLE ANTITOXIN LABORATORIES—Tablets Whole Ovary-Lederle, 2½ grains.

ELI LILLY & CO.—Antimeningococcic Serum Concentrated-Lilly. Antistreptococcic Serum, Purified and Concentrated (Lilly).

MALLINCKRODT CHEMICAL WORKS—Iso-Iodeikon.

MERCK & CO., INC.—Optochin Base. Optochin Hydrochloride.

H. K. MULFORD CO.—Mulford's Acidophilus Bacillus Blocks. Tetaus Antitoxin (Bovine).

PARKE, DAVIS & CO.—Capsules Ephedrine Sulphate-P. D. & Co., 3/8 grain. Capsules Ovarian Substance, Dessicated-P. D. & Co., 5 grains.

E. R. SQUIBB & SONS—Tablets Protargentum-Squibb, 4.6 grains. Tablets Solargentum-Squibb, 4.6 grains.

SWAN-MYERS CO.—Syrup Ephedrine Hydrochloride (Double Strength), Swan-Myers.

NON-PROPRIETARY ARTICLES — Ethylhydrocupreine. Phentetiothalein Sodium.

Diphtheria Toxin-Antitoxin Mixture.—The antitoxin used in the toxin-antitoxin mixture (New and Non-Official Remedies, 1928, p. 366) is produced from the horse, goat, or sheep.

Diphtheria Toxin Antitoxin Mixture (New Formula) (Sheep)-Squibb.—Each cubic centimeter represents 0.1 L+ dose of diphtheria toxin neutralized with the required amount of antitoxin obtained from the sheep. Marketed in packages of three ampules, each ampule containing 1 c.c. of the mixture; in vials containing, respectively, 10, 20, and 30 c.c.; and in packages of thirty 1-c.c. ampules. E. R. Squibb & Sons, New York.

Parathyroid Hormone-Squibb.—A stable aqueous solution containing the active principle or principles of the bovine parathyroid glands and having the property of relieving the symptoms of parathyroid tetany and of increasing the calcium content of the blood serum. It is standardized physiologically. Parathyroid Hormone-Squibb is claimed to be specific for normal or parathyroidectomized man when injected subcutaneously for increasing the level of the blood serum calcium. It is marketed in 5-c.c. vials. E. R. Squibb & Sons, New York.

Civil Service Openings

The United States Civil Service Commission announces the following open competitive examinations: Toxicologist, $3,800 to $4,400 a year; associate toxicologist, $3,200 to $3,700 a year; assistant toxicologist, $2,600 to $3,100 a year. Applications for the above-named positions must be on file with the Civil Service Commission at Washington, D. C., not later than January 23, 1929.

The examinations are to fill vacancies in the Bureau of Mines, Department of Commerce, for duty in Washington, D. C., or in the field; in the Chemical Warfare Service, War Department, for duty at Edgewood Arsenal, Edgewood, Maryland; and vacancies occurring in positions requiring similar qualifications.

The salaries of these positions are as specified above. For appointment in Washington, D. C., the entrance salary will be at the minimum rate of the salary range; appointment to the field service may be at any rate within the salary range, varying with the conditions obtaining at the headquarters where the vacancy exists. Higher-salaried positions are filled through promotion.

The duties are conducting or assisting in conducting experimental investigative work on the physiological action of toxic compounds. Full information may be obtained from the United States Civil Service Commission, Washington, D. C., or from the secretary of the United States Civil Service Board of Examiners at the post office or customhouse in any city.

Use of Cosmetics

Is the use of cosmetics in any form to be uncompromisingly condemned? Probably not, decides Dr. William H. Goeckerman in an article on this moot question in *Hygeia* for November.

Two serious phases of the present-day use of cosmetics with which the practicing skin specialist is constantly confronted are analyzed by Dr. Goeckerman. Nature evidently intended, he says, that air, light, and changes of temperature should reach the skin; it needs this moderate stimulation. The habitual use of cosmetics prevents proper stimulation.

The second abuse pointed out by Dr. Goeckerman is the placing of dangerous chemicals in the hands of the public by unscrupulous manufacturers. The

exaggerated claims made for some substance that is supposed to produce unrivaled beauty would be ridiculous if the results were not sometimes bad, as almost any physician can testify.

Often preparations are advertised as absolutely harmless when they contain wood alcohol, corrosive sublimate, arsenious acid, paraphenylendiamine (a toxic aniline dye), sugar of lead, and others equally dangerous.

Cosmetics should, by all means, be under the food and drugs act, Dr. Goeckerman urges. To make unwarranted claims for these preparations with the object of enormous profits is equivalent to selling "blue sky" stock, he declares.

Mentality Outlook

Cold statistics do not give a true picture of the fate of patients who enter hospitals for mental disease, Dr. L. D. Hubbard declares in an article in the October *Hygeia*.

When it is said that a certain percentage of so-called insane patients get well, mere figures give no hint of many factors that might mitigate their apparent hopelessness. Thus is perpetuated the tragic fallacy that those who once enter a hospital for mental patients are lost forever to family and friends.

A large number of mental patients are more than 60 years of age when they are admitted to the hospital and are suffering from organic brain disease or from the ravages of senility. Such patients as these can not be expected to recover, though they may improve sufficiently to enjoy visits at home or automobile rides.

Another element is the summary removal of a certain number of patients before the hospital has had time to treat them. In some cases they are taken to other hospitals for treatment. Sometimes the patients are not residents of the state in which they happen to be stricken and are removed to their own states.

Dr. Hubbard also scored the system of commitment and discharge of insane persons by juries unlearned in the diagnosis of mental disease. She cites the cases of five persons thus discharged from the hospital. Not one of them was considered by the hospital to have shown any improvement, and most of them returned later for further treatment.

A certain number of patients are on the hospital rolls who are not actually in the institution. Return to the outside world after a period of illness is necessarily gradual and is accomplished by means of gradually lengthening visits. Finally the patient remains at home, but is kept on the hospital roll that he may benefit from the assistance of the social service department.

In addition, there are such patients as will probably never fully recover but are able to enjoy life at home under the careful supervision of their families, so long as circumstances are favorable. Some have taken up with renewed energy the care of their homes and families and are again useful citizens.

It is apparent, then, that figures alone give a false impression of the status of mental patients. To the small number discharged as recovered may be added many who are leading happy, useful lives under the supervision of the hospital, and an equal number just beginning their trial trips into the world who will in all probability resume their old places in the community.

WOMAN'S AUXILIARY

McDowell County

The McDowell County Auxiliary held its first meeting of the year on October 10th at the Nurses' Home of the Welch Hospital, with thirteen members present. At this meeting plans were made and committees appointed to work with the Woman's Club of McDowell county and the Parent-Teachers' Association of Welch to put on a health program.

Plans were also made for a benefit bridge party to raise money for the year's welfare work. The Auxiliary decided to dispose of $25 worth of the tuberculosis Christmas seals for the Woman's Club.

After the business was completed, refreshments were served and a delightful social hour was enjoyed by the members.

A meeting of the McDowell County Woman's Auxiliary was held on November 14th at the Welch Hospital. At this meeting a report of the benefit bridge party was made, showing that it had been a success in every way and that more than $100 had been cleared. It was decided to use a part of this money to place *Hygeia*, the health magazine, in all

the high schools and junior high schools of the county. Final plans were formulated for the health program to be given on November 16th.

Report of the Meeting of the Southern Medical Association Auxiliary

The twenty-second annual meeting of the Southern Medical Association, and the fifth of the Woman's Auxiliary, was held at Asheville, North Carolina, November 12th to 15th, with headquarters at the Battery Park Hotel. The first business session of the Auxiliary was that of the executive board, which met in the Mah Jongg room of the George Vanderbilt Hotel on Monday afternoon. At this time appointments of the committees and general business were considered.

The annual meeting was held Tuesday morning in the Roof Lounge of the Battery Park Hotel, with an attendance of approximately 300 members and friends of the Auxiliary, the president, Mrs. A. T. McCormick of Louisville, Kentucky, presiding. After the invocation, welcome, and response, the president gave a very interesting address on Jane Crawford, pioneer heroine of surgery. Greetings from the Southern Medical Association were given by Dr. Wm. R. Bathurst of Little Rock, Arkansas, president of the association; also greetings from the American Medical Association Auxiliary were given by the president, Mrs. Allen H. Bunce of Atlanta, Georgia. Following these, reports of officers, delegates and committees, old and new business, were taken up. Outstanding among the latter was the resolution, passed on motion, for the appointment of an advisory board composed of three physicians, members of the Southern Medical Association, these to be appointed by the president of the association to act in an advisory capacity for the woman's auxiliary.

Later these appointments were made by Dr. Bathurst, the committee being composed of Dr. Southgate Leigh, Norfolk, Virginia; Dr. Seale Harris, of Birmingham, Alabama; and Dr. E. H. Cary, of Texas.

Also of special interest, the convention advocated the collection of historical data, medical and biographical, pertaining to the state and county society and its auxiliary. These to be preserved in a scrapbook and to be exhibited each year at the annual meeting, a prize being offered by the Southern Medical Auxiliary for the most complete scrapbook.

Following business, the new officers were installed with Mrs. C. W. Garrison of Little Rock, Arkansas, as president. A rising vote of appreciation was given the retiring officers and the meeting adjourned, to meet in Miami, Florida, in 1929.

The last business session of the convention was that of the executive board, which met Wednesday morning. This board is composed of the officers, chairmen of the standing committees, and presidents of the state auxiliaries. West Virginia was represented at the convention by the president, Mrs. R. V. Shanklin, Gary; Mrs. Charles F. Hicks, Welch, and Mrs. Vinson Taylor, Huntington, as delegate and alternate, and approximately ten or twelve members and friends of the auxiliary.

The first social affair of the auxiliary convention was a beautifull appointed luncheon, given Monday morning at the Battery Park Hotel by the president, Mrs. A. T. McCormick, for the incoming president, Mrs. C. W. Garrison, and the members of the executive board. An attractive feature of this was each guest giving her greatest 'phone "peeve." On Monday evening the open meeting with the doctors was held at the auditorium.

On Tuesday afternoon, the visiting ladies were taken for an automobile drive to the points of interest in and around Asheville, and which ended at the homes of seven ladies, wives of resident physicians, where teas were given simultaneously to assigned groups of visitors. Tuesday evening, informal bridge parties were given at Grove Park Inn, Kennilworth Inn, the George Vanderbilt Hotel, the Battery Park Hotel, and The Manor.

On Wednesday afternoon, the ladies were again taken for a drive to Overlook Park, and to Grove Park Inn, where an organ recital was given by Arnold Dann, noted concert artist, followed by tea at the same place. A number of luncheons, dinners, and small parties were given during the whole convention.

The closing social affair was the grand ball at the Kennilworth Inn, on Wednesday evening, for the president, members, and visitors. Too much can not be said in appreciation of the attention and hospitality shown the visiting ladies, during the convention, by the wives of the doctors of Asheville, ninety in number. Mrs. J. W. Huston, general chairman of entertainment, and her efficient committees, showered the ladies with every attention. Besides the social affairs mentioned, the wives of local physicians were in constant attendance at all the hotels, and nothing was left undone that would add to the comfort and pleasure of visitors.—MRS. R. V. SHANKLIN, Gary, President, West Virginia Woman's Auxiliary.

Members of West Virginia State Medical Association, 1928

Barbour-Randolph-Tucker Society

H. H. Bolten, Pierce
A. S. Bosworth, Elkins
J. L. Bosworth, Mill Creek
Perry Bosworth, Huttonsville
A. P. Butt, Elkins
T. T. Crittenden, Kitzmiller, Md.
Guy N. Cromwell, Davis
William R. Dove, Harman
A. M. Fredlock, Elkins
B. I. Golden, Elkins
Wm. W. Golden, Elkins
C. H. Hall, Elkins
E. M. Hamilton, Belington
J. C. Irons, Horton
E. R. McIntosh, Elkins
Guy H. Michael, Norton
W. S. Michael, Norton
J. L. Miller, Thomas
S. G. Moore, Elkins
H. K. Owens, Elkins
O. L. Perry, Elkins
C. G. Stroud, Brownton
Richard Talbott, Erwin
J. M. Teter, Century
W. E. Whiteside, Parsons
C. B. Williams, Philippi
T. M. Wilson,Elkins

Brooke County Society

G. W. Abersold, Short Creek
J. R. Arnold, Follansbee
L. J. Bernstein, Wellsburg
W. T. Booher, Wellsburg
F. T. Dare, Wellsburg
F. L. Matson, Wellsburg
J. S. McCullough, Follansbee
W. J. McDonald, Wellsburg
J. P. McMullen, Wellsburg
Harry F. Nolte, Beech Bottom
J. C. Schulz, Wellsburg

Cabell County Society

James H. Baber, Huntington
W. F. Beckner, Huntington
O. B. Biern, Huntington
J. R. Bloss, Huntington
R. M. Bobbitt, Huntington
H. A. Brandebury, Huntington
B. F. Brown, Huntington
C. M. Buckner, Huntington
A. W. Crews, Huntington
D. J. Cronin, Huntington
B. H. Denham, Huntington
C. P. S. Ford, Huntington
J. A. Guthrie, Huntington
L. V. Guthrie, Huntington
J. C. Hardman, Huntington
H. D. Hatfield, Huntington
C. M. Hawes, Huntington
J. S. Hayman, Huntington
W. D. Hereford, Huntington
I. C. Hicks, Huntington
I. I. Hirschman, Huntington
F. C. Hodges, Huntington
F. J. Hoitash, Huntington
G. L. Howard, Huntington
J. E. Hubbard, Huntington
B. L. Hume, Huntington
W. Byrd Hunter, Huntington
G. D. Johnson, Huntington
A. S. Jones, Huntington
A. T. Jordan, Hurricane
W. C. Kappes, Huntington
J. R. Keesee, Huntington
A. D. Kessler, Huntington
A. K. Kessler, Huntington
J. S. Klump, Huntington
C. A. Latham, Huntington
W. M. Lewis, Huntington
Geo. M. Lyon, Huntington
A. R. MacKenzie, Huntington
H. C. Malcolm, Huntington
F. O. Marple, Huntington
H. B. Martin, Huntington
J. C. Matthews, Huntington
E. N. Miller, Huntington
M. B. Moore, Huntington
T. W. Moore, Huntington
Lon C. Morrison, Milton
D. E. Musgrave, Barboursville
K. C. Prichard, Huntington
J. E. Rader, Huntington
W. N. Rowley, Huntington
F. X. Schuller, Huntington
R. M. Sloan, Huntington
J. H. Steenbergen, Huntington
W. W. Strange, Huntington
W. C. Swann, Huntington
C. T. Taylor, Huntington
I. W. Taylor, Huntington
W. C. Thomas, Huntington
R. S. Van Meter, Huntington
Walter E. Vest, Huntington
L. T. Vinson, Huntington
S. P. Walker, Huntington
A. J. Watts, Huntington
R. J. Wilkinson, Huntington
C. G. Willis, Huntington
C. B. Wright, Hutington
R. M. Wylie, Huntington
A. B. York, Huntington

Central West Virginia Society

S. P. Allen, Webster Springs
G. O. Brown, Buckhannon
H. S. Brown, Sutton
C. C. Carson, Gassaway
D. G. Caudy, Tioga
L. W. Deeds, Buckhannon
Cecil C. Denham, Buckhannon
J. B. Dodrill, Webster Springs
Hugh Dunn, Richwood
O. O. Eakle, Sutton
W. E. Echols, Richwood
C. F. Fisher, Buckhannon
E. S. Frame, Fenwick
J. T. Graham, Richwood
M. F. Gruber, Erbacon
S. S. Hall, Buckhannon
L. O. Hill, Camden-on-Gauley
W. H. McCauley, Sutton
James McClung, Richwood
R. A. McCosh, Richwood
M. T. Morrison, Sutton
L. W. Page, Buckhannon
J. A. Rusmisell, Buckhannon
Karl H. Trippett, Glenville
H. O. VanTromp, French Creek
Everett Walker, Adrian
T. M. Winn, Richwood

Doddridge County Society

Homer Freeman, Center Point
A. M. McGovern, West Union
A. Poole, West Union
E. T. Wetzel, West Union

Eastern Panhandle Society

A. O. Albin, Charles Town
E. H. Bitner, Martinsburg
Ross Cameron, Martinsburg
Roger Clapham, Martinsburg
James A. Duff, Martinsburg
A. B. Eagle, Martinsburg
Victor Glover, Martinsburg
James K. Guthrie, Martinsburg
B. F. Haines, Charles Town
W. T. Henshaw, Charles Town
C. C. Johnson, Harpers Ferry
George W. Martin, Martinsburg
G. P. Morison, Martinsburg
T. K. Oates, Martinsburg
F. M. Phillips, Charles Town
Marvin H. Porterfield, Martinsburg
R. K. Shirley, Hedgesville
Clifford Sperow, Martinsburg
G. J. E. Sponseller, Martinsburg
P. E. Stigers, Hancock, Md.
R. E. S. Taylor, Paw Paw
W. A. Wallace, Martinsburg
H. G. Tonkin, Martinsburg

Fayette County Society

Templeton Adaire, Mt. Hope
G. C. Andes, Milburn
Arthur E. Bays, Boomer
F. W. Bilger, Maybeury
Milton C. Borman, Montgomery
J. C. Brown, Nallen
B. F. Brugh, Montgomery
W. E. Bundy, Minden
A. J. Burkholder, Layland
G. O. Crank, Lawton
J. M. Crymes, Milburn
T. B. Daugherty, Fayetteville
Claude Frazier, Powellton
E. J. Grose, Fayetteville
J. E. Hamner, Rainelle
Frank S. Harkleroad, Harvey
L. R. Harless, Glen Ferris
W. N. Haynes, Victor
O. J. Henderson, Montgomery
G. G. Hodges, Kilsythe
Ralph Hogshead, Carbondale
L. G. Houser, Beckley
J. E. Hughart, Landisburg
A. L. Hunter, Pax
E. E. Jones, Mt. Hope
Wm. R. Laird, Montgomery
Thos. A. Lamb, Montgomery
C. W. Lemon, Claremont
H. C. Martin, Rainelle
J. A. McGraw, Cunard
W. P. McIntosh, Longacre
M. A. Moore, Kingston
A. L. Morris, Jodie
R. S. Peck, Cannelton
S. W. Price, Scarbro
B. F. Puckett, Oak Hill
J. S. Shaffer, Montgomery
D. W. Shirkey, Montgomery
G. W. Skaggs, Page

H. C. Skaggs, Montgomery
G. A. Smith, Montgomery
J. M. Spinks, Mt.Hope
C. W. Stallard, Montgomery
J. F. Van Pelt, Oak Hill
J. W. Walker, Winona
H. A. Walkup, Mt. Hope
C. L. Woodbridge, Montgomery
Robert P. Woods, Oak Hill

Grant-Hampshire-Hardy-Mineral

J. G. Abbott,Piedmont
W. M. Babb, Keyser
Robert Bess, Piedmont
Thomas Bess, Keyser
O. V. Brooks, Moorefield
H. F. Coffman, Keyser
W. G. Drinkwater, Gormania
V. L. Dyer, Petersburg
J. F. Easton, Romney
Wm. A. Flick, Keyser
T. C. Giffen, Keyser
George S. Gochenour, Moorefield
J. B Grove, Petersburg
W. T. Highburger, Maysville
S. B. Johnson, Franklin
Z. T. Kalbaugh, Piedmont
J. O. Lantz, Hartmansville
R. E. Lee, Wardensville
Robert W. Love, Moorefield
E. B. Martin, Romney
M. H. Maxwell, Keyser
B. F. Moyers, Matthias
J. A. Moyers, Franklin
A. A. Scherr, Keyser
E. K. Wilson, Romney
P. R. Wilson, Piedmont
J. H. Wolverton, Piedmont
M. F. Wright, Burlington

Greenbrier Valley Society

J. D. Arbuckle, Maxwelton
O. P. Argabrite, Alderson
H. L. Beard, Lewisburg
W. C. Beard, Alderson
C. R. Campbell, Williamsburg
J. M. Cofer, Slaty Fork
J. W. Compton, Ronceverte
J. W. DeVebre, Ronceverte
A. D. Ferrell, Ronceverte
T. L. Gilchrist, Pickaway
H. L. Goodman, Ronceverte
H. D Gunning, Ronceverte
U. H. Hannah, Cass
H. W. Hogue, White Sulphur Springs
J. A. Jackson, Ronceverte
E. G. Kesler, Williamsburg
J. G. Leech, Quinwood
C. F. Mahood, Alderson
S. A. McFerrin, Renick
John Francis Moriarty, White Sulphur Springs
W. E. Myles, White Sulphur Springs
D. G. Preston, Lewisburg
N. R. Price, Marlinton
B. L. Traynham, Sweet Springs

Harrison County Society

C. T. Arnett, Clarksburg
C. S. Bates, Lumberport
B. S. Brake, Clarksburg
J. T. Brennan, Clarksburg
S. L. Cherry, Clarksburg
I. D. Cole, Clarksburg
J. E. Corbin, Clarksburg
D. P. Cruikshank, Lumberport
Louise J. Currance, Clarksburg
Edward Davis, Salem
W. M. Davis, Bridgeport
C. R. DeForest, Clarksburg,
W. C. DeForest, Clarksburg
H. H. Esker, Clarksburg
A. O. Flowers, Clarksburg
Earl N. Flowers, Clarksburg
E. Newton Flowers, Clarksburg
John Folk, Bridgeport
William Gaston, Clarksburg
Wm. B. Gaston, Mt. Clare
Wm. T. Gocke, Clarksburg
L. C. Goff, Clarksburg
O. S. Gribble, Clarksburg
G. E. Halyama, Clarksburg
W. P. Hammer, Lumberport
Alex Hannah, R. F. D. Wilsonburg
H. H. Haynes, Clarksburg
R. A. Haynes, Clarksburg
E. A. Hill, Clarksburg
R. C. Hood, Clarksburg
Kenna Jackson, Wallace
C. C. Jarvis, Clarksburg
A. J. Kemper, Lost Creek
L. F. Kornman, Clarksburg
O. W. Ladwig, Wilsonburg
F. V. Langfitt, Clarksburg
D. Leeson, Clarksburg
R. H. Leu, New Martinsville
R. B. Linger, Lost Creek
R. V. Lynch, Meadowbrook
J. S. Maloy, Shinnston
W. A. Marsh, Clarksburg
B. F. Matheny, Clarksburg
John P. McGuire, Clarksburg
R. B. Nutter, Enterprise
R. J. Nutter, Clarksburg
C. R. Ogden, Clarksburg
R. L. Osborne, Clarksburg
W. T. Owens, Clarksburg
J. E. Page, Clarksburg
Edward Payne, Clarksburg
C. R. Peck, Clarksburg
E. Pendleton, Clarksburg
A. T. Post, Clarksburg
Cecil O. Post, Clarksburg
S. H. Post, Lost Creek
R. M. Riley, Nutters Fort
H. A. Rosenthal, Clarksburg
Sylvia Saurborne, Clarksburg
V. A. Selby, Clarksburg
B. F. Shuttleworth, Clarksburg
C. N. Slater, Clarksburg
H. E. Sloan, Clarksburg
W. L. Strother, Wilsonburg
E. A. Teets, Clarksburg
E. D. Tucker, Nutters Fort
J. H. Underwood, Shinnston
W. L. Thomason, Clarksburg
E. F. Wehner, Clarksburg
H. A. Whisler, Clarksburg
J. F. Williams, Clarksburg
E. A.Wilson, Salem
J. E. Wilson, Clarksburg
E. B. Wright, Clarksburg

Kanawha Medical Society

A. L. Amick, Charleston
Maury Anderson, Dunbar
L. L. Aultz, Charleston
O. L. Aultz, Charleston
Ernest Ball, Charleston
Bankhead Banks, Charleston
D. N. Barber, Owens
T. M. Barber, Charleston
G. H. Barksdale, Charleston
W. P. Black, Charleston
B. V. Blagg, South Charleston
O. H. Bobbitt, Charleston
Andrew S. Boggs, Charleston
E. H. Boyer, Clinton, Iowa
C. N. Brown, Swandale
R. J. Brown, Charleston
R. K. Buford, Charleston
E. H. Campbell, Carbon
J. E. Cannaday, Charleston
G. B. Capito, Charleston
T. J. Casto, Charleston
I. P. Champe, Charleston
V. T. Churchman, Charleston
V. T. Churchman, Jr., Charleston
C. E. Copeland, Charleston
Edwin A. Davis, Charleston
M. L. Dillon, Charleston
Ross M. Dodson, Charleston
M. S. Duling, Charleston
J. W. Duff, Charleston
J. L. Dunlap, Bancroft
R. H. Dunn, South Charleston
G. P. Fisher, Kayford
C. A. Fleger, Prenter
Ralph J. Ford, Charleston
Ray I. Frame, Sharples
H. R. Glass, Charleston
M. V. Godbey, McKendree
M. D. Good, Charleston
Fred Gott, Charleston
G. F. Grisinger, Charleston
J. H. Hansford, Pratt
A. J. Harness, Coalburg
E. R. Hatfield, Charleston
E. R. Hays, Chelyan
E. Bennette Henson, Charleston
H. H. Howell, Danville
W. R. Hughey, Charleston
J. Ross Hunter, Charleston
R. A. Ireland, Charleston
G. G. Irwin, Charleston
L. A. Jarrett, Dunbar
Ray Kessel, Charleston
Russell Kessel, Charleston
H. C. Kincaid, Charleston
A. C. Lambert, Charleston
R. H. Lewellyn, Putney
J. B. Lohan, Charleston
C. L. Lyon, Charleston
Atlee Mairs, Charleston
John I. Markell, Ward
C. B. Marshall, Nitro
U. G. McClure, Charleston
W. A. McMillan, Charleston
H. D. McPherson, Sharon
M. I. Mendeloff, Charleston
John W. Moore, Charleston
L. H. Mynes, Charleston
A. B. Nelson, East Bank
Hugh G. Nicholson, Charleston
J. T. Nolen, Ward
R. O. O'Dell, South Charleston
Charles O'Grady, Charleston
D. F. Pauley, Jeffrey
M. F. Peterson, Charleston
L. A. Petty, Charleston
S. H. Phillips, Charleston
B. N. Pittenger, St. Albans
Walter W. Point, Charleston
Owen Poling, Nellis
F. G. Prather, Barrett
B. S. Preston, Charleston
Robert B. Price, Charleston
James Putney, Charleston
Carl F. Raver, Charleston
C. A. Ray, Charleston
Roy Ray, Clendenin
G. A. Rigrish, Charleston
J. E. Roberts, Charleston
G. C. Robertson, Charleston
H. L. Robertson, Charleston

W. S. Robertson, Charleston
Hugh Robins, Charleston
J. U. Rohr, Charleston
R. D. Roller, Jr., Charleston
G. C. Schoolfield, Charleston
J. T. Sharp, Charleston
A. A. Shawkey, Charleston
W. S. Shepherd, Charleston
W. F. Shirkey, Charleston
J. R. Shultz, Charleston
J. S. Skaggs, Seth
J. W. Skaggs, Nitro
A. A. Smith, Ivaton
J. A. Smith, South Charleston
E. W. Smoot, Madison
S. B. Souleyret, Gamoca
H. H. Staats, Charleston
R. R. Summers, Charleston
B. H. Swint, Charleston
W. E. Taylor, Mammoth
John Thames, Charleston
H. G. Thompson, Charleston
W. A. Thornhill, Charleston
A. C. Vandine, Charleston
R. H. Walker, Charleston
C. N. Watts, Marmet
F. P. Weltner, Charleson
W. B. Wilson, Charleston
W. H. Wilson, St. Albans
R. F. Woodall, Charleston
J. A. Work, Blue Creek
W. F. Work, Charleston

Lewis County Society

G. M. Burton, Weston
S. H. Burton, Weston
D. D. Chapman, Vadis
F. R. Cooper, Troy
M. D. Cure, Weston
W. H. Greene, Weston
E. T. W. Hall, Weston
O. L. Hudkins, Weston
D. P. Kesler, Weston
W. P. King, Weston
A. F. Lawson, Weston
H. B. Neagle, Weston
G. R. Post, Washington, D. C.
Charles B. Rohr, Alum Bridge
W. T. Smith, Glenville
George Snyder, Weston

Logan County Society

Z. M. Bardin, Mallory
Roy A. Bell, Holden
F. E. Brammer, Dehue
Joy R. Crawley, Big Creek
C. A. Davis, Logan
H. H. Farley, Logan
T. J. Farley, Lorado
W. F. Farley, Holden
S. J. Ferguson, Verdonville
T. J. Ferrell, Chapmanville
J. P. Gentile, Evansville, Ind.
W. S. Gilmer, Henlawson
W. F. Harless, Clothier
K. J. Heatherman, Omar
J. O. Hill, Logan
V. E. Holcombe, Logan
Augustus Holderfield, Man
B. E. Hunt, Holden
H. C. Jones, Logan
L. W. Lawson, Logan
J. I. Justice, Logan
S. B. Lawson, Logan
E. R. Logan, Omar
J. W. Lyons, Holden
C. A. Martin, Amherstdale
J. F. May, Rossmore
O. G. McConnell, Blair
John W. McNabb, Monaville
D. T. Moore, Stirrat
W. H. Parker, Braeholm
Nathan Poliakoff, Amherstdale
R. W. Quaintance, Lundale
R. W. Roberts, Man
F. L. Round, Holden
W. S. Rowan, Logan
C. G. Scruggs, Putney
Mark Sutphin, Logan
Mark Sutphn, Logan
Nicholas Szucs, Logan
W. J. Thomas, Taplin
E. B. Thompson, Ethel
J. H. Thornbury, Stowe
Harold VanHouse, Whitman
R. R. Vaughn, Dehue
P. B. Wingfield, Logan

Marion County Society

W. R. Andrews, Fairmont
J. W. Ballard, Fairmont
J. M. Barr, Middleton
L. B. Boyers, Fairmont
G. H. Brownfield, Fairmont
Carl J. Carter, Fairmont
H. D. Causey, Fairmont
J. B. Clinton, Fairmont
James C. Collins, Fairmont
W. L. Coogle, Rivesville
H. L. Criss, Fairmont
Luther C. Davis, Fairmont
D. P. Fitch, Fairmont
F. E. Flowers, Mannington
Charles T. Francis, Fairmont
D. D. Hamilton, Mannington
M. F. Hamilton, Mannington
C. O. Henry, Fairmont
M. M. Hill, Fairmont
C. L. Holland, Fairmont
H. L. Horton, Fairmont
E. W. Howard, Fairmont
L. D. Howard, Fairmont
J. A. Jamison, Fairmont
J. J. Jenkins, Fairmont
H. R. Johnson, Fairmont
Philip Johnson, Fairmont
H. S. Keister, Fairmont
C. L. Kinney, Ida May
C. S. Lawson, Fairmont
Wm. J. Leahy, Mannington
George R. Miller, Fairview
T. H. Miller, Fairmont
Phoebia G. Moore, Mannington
G. V. Morgan, Fairmont
L. D. Norris, Fairmot
J. E. Offner, Fairmont
W. W. Orr, Mannington
C. L. Parks, Fairmont
A. L. Peters, Fairmont
P. F. Prioleau, Fairmont
C. M. Ramage, Fairmont
J. A. Reidy, Monongah
A. W. Smith, Farmington
F. P. Smith, Fairmont
L. S. Smith, Monongah
F. F. Sowers, Fairmont
E. W. Strickler, Fairmont
K. Y. Swisher, Fairview
J. M. Trach, Fairmont
G. H. Traugh, Fairmont
J. R. Tuckwiller, Fairmont
F. W. Vance, Mannington
C. W. Waddell, Fairmont
W. A. Welton, Fairmont
R. S. White, Fairmont
Joe Yost, Fairmont
L. N. Yost, Fairmont

Marshall County Society

J. E. Arnold, Cameron
R. A. Ashworth, Moundsville
P. D. Barlow, McMechen
W. P. Bonar, Moundsville
B. F. Bone, Moundsville
J. E. Cooper, Cameron
O. F. Covert, Moundsville
D. B. Faly, Moundsville
C. S. Fortney, Hundred
Mary J. Fortney, Hundred
W. B. Hartwig, Benwood
Wm. G. C. Hill, Cameron
John H. Luikart, Moundsville
F. E. Martin, New Martinsville
James H. McCall, Byron, Mich
L. H. McCuskey, Moundsville
C. R. McGuffie, McMechen
Chas. G. Morgan, Moundsville
J. W. Niedermeyer, McMechen
J. C. Peck, Moundsville
J. A. Striebich, Moundsville
J. O. Theiss, New Martinsville
H. C. Whisler, Smithfield
O. P. Wilson, Moundsville
S. F. Yoho, Captina

McDowell County Society

J. Howard Anderson, Hemphill
W. P. Bean, Keystone
J. A. Bennett, Algoma
R. K. Bragonier, Keystone
G. W. Brewster, Pineville
John F. Cadden, Hemphill
H. G. Camper, Welch
A. L. Carson, Thorpe
L. H. Clark, Kyle
C. C. Cochrane, Kimball
W. E. Cook, Pageton
N. F. Coulon, Filbert
L. A. Crandell, McDowell
S. A. Daniels, Welch
J. E. Davis, Welch
Charles E. Dyer, Roderfield
J. W. Fnglish, McDowell
G. P. Evans, Iaeger
W. F. Ferguson, Premier
D. L. Fleshman, Bassett, Va.
W. C. Hall, Welch
D. D. Hatfield, Yukon
Charles F. Hicks, Welch
C. R. Hughes, Kimball
Alex Irvine, McDowell
W. L. Johnston, McDowell
W. M. Junkin, Welch
J. C. Killey, Vivian
Luther R. Lambert, Coalwood
E. C. Maphis, Panther
T. G. Matney, Iaeger
J. Louis McCarty, Berwind
R. C. Newkirk, Twin Branch
W. L. Peck, Coalwood
I. T. Peters, Maybeury
J. T. Peters, Gary
A. G. Rutherford, Welch
R. V. Shanklin, Gary
A. B. Spahr, New Hall
W. S. Steele, McDowell
W. B. Stevens, Eckman
G. L. Straub, Welch
M. H. Tabor, Crumpler
M. F. Torregrosa, Ashland
H. L. Tutwiler, Iaeger

A. C. Van Rennen, Davy
E. E. Vermilion, Welch
C. W. Vick, Jenkin-Jones
E. M. Wilkinson, Welch
A. A. Wilson, Switchback
C. R. Woolwine, Davy
W. B. Young, Elkhorn

Mercer County Society

A. E. Amick, Bluefield
C. C. Ballard, Gap Mills
B. W. Bird, Princeton
J. H. Bird, Rock
J. G. Bishop, Bluefield
J. E. Blaydes, Bluefield
John R. Boyd, Oakvale
M. B. Caldwell, Matoaka
B. S. Clements, Matoaka
F. J. Collison, Bluefield
J. H. Craft, Springton
W. B. Davis, Princeton
W. E. Dickerson, Princeton
W. D. Fitzhugh, McComas
J. Francke Fox, Bluefield
P. R. Fox, McComas
H. H. Haggart, Bluefield
O. S. Hare, Bluefield
W. W. Harloe, Matoaka
A. H. Hoge, Bluefield
F. F. Holroyd, Princeton
Samuel R. Holroyd, Athens
E. W. Horton, Bluefield
S. J. Kell, Bluefield
J. B. Kirk, Bluefield
D. B. Lepper, Bluefield
David Littlejohn, Charleston
H. B. Luttrell, Bramwell
M. N. Mastin, Lisbon, Md.
P. J. McElrath, Bramwell
John McGuire, Bluefield
W. R. Morris, Alpoca
H. A. Porter, Itman
C. J. Reynolds, Bluefield
F. S. Richmond, Bluefield
Francis T. Ridley, Bluefield
R. O. Rogers, Bluefield
C. T. St. Clair, Bluefield
W. H. St. Clair, Bluefield
C. M. Scott, Bluefield
M. W. Sinclair, Bluefield
W. C. Slusher, Bluefield
Carl W. Smith, Princeton
Ira M. Smith, Princeton
B. W. Steele, Mullins
Harry G. Steele, Bluefield
Robert R. Stewart, Bluefield
E. M. Tanner, Bluefield
G. T. Thornhill, Bluefield
G. L. Todd, Princeton
T. E. Vass, Bluefield
J. R. Vermillion, Princeton
Uriah Vermillion, Athens
W. H. Wallingford, Princeton
A. D. Wood, Bluefield

Mingo County Society

W. H. Burgess, Williamson
G. T. Conley, Williamson
Rush F. Farley, Delbarton
H. C. Hays, Williamson
O. P. Hodge, Matewan
G. B. Irvine, Williamson
O. H. Jennings, Williamson
B. W. Kendall, Columba, S. C.
J. C. Lawson, Williamson
John D. Lee, Williamson
W. F. Leach, Williamson
James G. Lowry, Delbarton
Frank Mosley, Williamson
Rufus M. Music, Delbarton
P. P. Nottinghom, Stone, Ky.
C. E. Perry, Glenalum
W. H. Price, Chattaroy
Fred Ben Quincy, Williamson
B. J. Read, Red Jacket
A. S. Richardson, O'Keefe
R. A. Salton, Williamson
U. O. Sanders, Lobata
Henry C. Smith, Williamson
E. P. Stepp, Kermit
William York, Huntington

Monongalia County Society

P. D. Arbogast, Morgantown
M. L. Bonar, Morgantown
C. F. Boyers, Morgantown
Dorsey Brennan, Morgantown
C. M. Bray, Morgantown
M. H. Brown, Morgantown
L. W. Cobun, Morgantown
F. P. Coombs, Morgantown
S. W. Cottle, Morgantown
R. H. Edmondson, Morgantown
C. C. Feton, Morgantown
R. W. Fisher, Morgantown
E. F. Heiskell, Morgantown
W. H. Howell, Morgantown
J. R. Hughart, Morgantown
B. Clifford John, Morgantown
Brinley John, Morgantown
Francis P. Kenney, Morgantown
C. Royall Kessel, Morgantown
H. V. King, Morgantown
J. P. Lilly, Morgantown
W. S. Magill, Morgantown
C. H. Maxwell, Morgantown
G. R. Maxwell, Morgantown
T. Jud McBee, Morgantown
Cosimo Menzalora, Morgantown
S. J. Morris, Morgantown
W. C. Moser, Morgantown
D. M. Pfost, Morgantown
Geo. W. Phillips, Morgantown
H. C. Powell, Morgantown
R. Coale Price, Morgantown
C. B. Pride, Morgantown
C. C. Romine, Morgantown
F. T. Scanlon, Morgantown
W. B. Scherr, Morgantown
J. N. Simpson, Morgantown
A. E. Smith, Morgantown
B. M. Stout, Morgantown
Samuel F. Talbott, Morgantown
Alfred C. Taylor, Mona
E. R. Tayor, Morgantown
E. B. Tucker, Morgantown
S. S. Wade, Morgantown
C. B. Wylie, Morgantown

Ohio County Society

D. M. Aikman, Wheeling
E. L. Armbrecht, Wheeling
R. J. Armbrecht, Wheeling
D. B. Best, Wheeling
W. M. Best, Wheeling
W. M. Dalbey, Wheeling
Thos. F. Downing, Wheeling
J. L. Eskey, Morgantown
W. C. Etzler, Wheeling
E. S. Bippus, Wheeling
H. W. Bond, Wheeling
J. R. Caldwell, Wheeling
C. H. Clovis, Wheeling
E. E. Clovis, Wheeling
J. Plumer Cole, Wheeling
H. B. Copeland, Wheeling
A. L. Coyle, Wheeling
W. A. Cracraft, Wheeling
H. N. Deem, Wheeling
R. U. Drinkard, Wheeling
A. C. Earnest, Wheeling
Louis B. Farri, Wheeling
Ivan Fawcett, Wheeling
W. S. Fulton, Wheeling
M. Gaydosh, Wheeling
R. D. Gill, Wheeling
J. W. Gilmore, Wheeling
Earl F. Glass, Wheeling
A. J. Goodwin, Wheeling
O. H. Griffith, Wheeling
H. M. Hall, Wheeling
L. N. Harris, Wheeling
H. A. Henderson, Wheeling
A. W. Higgins, Wheeling
Arthur K. Hoge, Wheeling
Thos. R. Hoge, Wheeling
Harry Hubbard, Tiltonsville, Ohio
Elizabeth Hupp, Wheeling
F. L. Hupp, Wheeling
A. L. Jones, Wheeling
E. Lloyd Jones, Wheeling
W. K. Kalbfleisch, Wheeling
Chas. H. Kessor, Wheeling
M. B. Kelly, Wheeling
T. M. Klug, Wheeling
D. A. MacGregor, Wheeling
J. E. Marschner, Wheeling
J. Robert McClung, Wheeling
W. T. McClure, Wheeling
John H. McColl, Wheeling
A. V. McCoy, Tridelphia
O. D. McCoy, Wheeling
W. H. McLain, Wheeling
R. M. McMillen, Wheeling
Mary B. Monroe, Wheeling
W. T. Morris, Wheeling
B. D. Morrison, Wheeling
A. E. Nolte, Wheeling
A. J. Noome, Wheeling
H. E. Oesterling, Wheeling
J. J. Osburn, Wheeling
E. M. Phillips, Wheeling
E. S. Phillips, Wheeling
Howard T. Phillips, Wheeling
E. B. Plant, Wheeling
W. A. Qumby, Wheeling
J. O. Rankin, Wheeling
R. J. Reed, Wheeling
Robert J. Reed, Jr., Wheeling
A. F. Ruble, Elm Grove
J. W. Ruckman, West Liberty
W. P. Sammons, Warwood
Gustave Selbach, Wheeling
W. M. Sheppe, Wheeling
T. K. Shields, Elm Grove

R. J. Snider, Wheeling
O. M. Staats, Wheeling
J. G. Thoner, Wheeling
J. T. Thornton, Wheeling
R. A. Tomassene, Wheeling
S. W. Tretheway, Wheeling
C. M. Truschel, Wheeling
G. L. Vieweg, Wheeling
Max Vieweg, Wheeling
W. S. Webb, Wheeling
M. B. Williams, Wheeling
C. A. Wingerter, Wheeling
L. K. Zimmer, Wheeling
M. C. Zubak, Wheeling

Academy of Medicine of Parkersburg

W. A. Adams, Parkersburg
O. D. Barker, Parkersburg
R. H. Boice, Parkersburg
Rolla Camden, Parkersburg
W. C. Camp, Spencer
H. M. Campbell, Parkersburg
D. C. Casto, Parkersburg
O. J. Casto, Parkersburg
Orva Conley, Parkersburg
Ira Connolly, Parkersburg
R. W. Corbitt, Parkersburg
F. W. Crooks, Parkersburg
R. E. Davis, Parkersburg
A. M. Dearman, Parkersburg
U. L. Dearman, Reedy
E. H. Douglas, Petroleum
Z. B. Ferrell, Parkersburg
Mark O. Fisher, Parkersburg
H. E. Gaynor, Parkersburg
H. A. Giltner, Parkersburg
E. S. Goff, Spencer
E. T. Goff, Parkersburg
J. J. Goff, Parkersburg
J. T. Goff, Parkersburg
W. R. Goff, Parkersburg
C. E. Grimm, St. Marys
T. L. Harris, Parkersburg
E. C. Hartman, Parkersburg
Geo. D. Jeffers, Parkersburg
A. P. Jones, Pennsboro
L. P. Jones, Pennsboro
T. W. Kieth, Harrisville
C. D. Kraft, Parkersburg
J. C. Lawson, Auburn
John E. McQuain, Parkersburg
R. B. Miller, Parkersburg
E. D. Moyers, Cairo
C. L. Muhleman, Parkersburg
Allen F. Murphy, St. Marys
R. H. Paden, Parkersburg
C. E. Park, Parkersburg
B. S. Parks, Parkersburg
W. D. Pickering, Lone Cedar
S. M. Prunty, Parkersburg
C. W. Rexroad, Harrisville
W. B. Richardson, Parkersburg
B. O. Robinson, Parkersburg
J. G. Rogers, Parkersburg
L. O. Rose, Parkersburg
H. M. Rymer, Harrisville
Paul C. Starkey, Ravenswood
M. R. Stone, Parkersburg
H. H. Veon, Parkersburg
R. H. Wharton, Parkersburg
R. S. Widemeyer, Parkersburg
J. B. Wilson, Pennsboro
S. H. D. Wise, Parkersburg
E. L. Wright, Parkersburg

Preston County Society

F. A. Brown, Hopemont
W. F. Dailey, Terra Alta
A. G. De Foe, Bruceton Mills
H. M. Divvens, Masontown
G. F. Evans, Hopemont
F. D. Fortney, Newburg
R. D. Harman, Kingwood
L. H. Lewis, Kingwood
Etta Mason, Hopemont
Blanche B. Miller, Eglon
Harold Miller, Eglon
W. L. H. Moore, Newburg
H. N. Moser, Terra Alta
J. G. Pettit, Hopemont
W. H. Post, Masontown
M. H. Proudfoot, Rowlesburg
B. S. Rankin, Tunnelton
D. J. Rudasill, Kingwood
E. E. Watson, Albright
Stanley R. White, Bruceton Mills
Ernest Wichterman, Masontown
J. J. Willingham, Hopemont
E. D. Wise, Rowlesburg

Raleigh County Society

J. O. Bailiff, Mullens
McRae C. Banks, Raleigh
A. G. Bowles, Glen White
U. G. Cook, Beckley
W. C. Covey, Winding Gulf
W. H. Cunningham, Blue Jay
D. D. Daniel, Eccles
G. P. Daniel, Glen Daniel
Ross P. Daniel, Pemberton
E. S. Dupuy, Beckley
Byron W. Eakin, Tams
Ira M. Fisher, Stotesbury
George Fordham, Wyco
T. F. Garrett, Sprague
A. H. Grigg, Beckley
John L. Haddox, Montcoal
O. L. Hamilton, Vanwood
E. H. Hedrick, Beckley
D. L. Hill, Wickham
W. W. Hume, Beckley
J. T. T. Hundley, Jr., Lillybrook
R. L. Hunter, Jarrolds Valley
D. B. Jarrell, Beckley
Kyle M. Jarrell, Beckley
G. W. Johnson, McAlpin
J. T. Johnson, Hamlet
J. H. McCulloch, Beckley
J. E. McKenzie, Beckley
A. A. Milburn, Beckley
F. J. Moore, Affinity
W. G. Moran, Jr.,Fireco
J. E. Parks, Price Hill
B. B. Richmond, Skelton
Walter D. Simmons, Slab Fork
J. H. Smith, Edwight
A. U. Tieche, Beckley
B. B. Wheeler, Beckley
J. O. Williams, Amigo
E. W. Wood, East Gulf
Robert Wriston, Beckley

Summers County Society

H. F. Bigony, Hinton
J. F. Bigony, Hinton
R. G. Broaddus, Hinton
O. O. Cooper, Hinton
George K. Nutting, Hinton
G. L. Pence, Hinton
P. P. Pharr, Hinton
D. M. Ryan, Hinton
J. W. Stokes, Hinton
W. L. Van Sant, Hinton
J. H. Wilson, Meadow Creek

Taylor County Society

E. R. Bucklew, Grafton
D. C. Peck, Grafton
C. F. Shafer, Grafton
R. D. Stout, Grafton
F. S. Suddarth, Grafton
A. R. Warden, Grafton
Paul Warden, Grafton
A. S. Warder, Jr.,Grafton
J. W. Whitescarver, Grafton

Tyler County Society

E. E. Fankhouser, New Martinsville
J. A. Gartlan, Wick
V. H. Kemper, Sistersville

Wayne County Society

W. F. Bruns, Ceredo
L. B. Dean, Kenova
J. W. Ferguson, Kenova
B. D. Garrett, Kenova
Glenn Johnson, Wayne
J. W. Rife, Kenova
R. V. Shirley, Ceredo
Roscoe Stotts, Kenova
C. M. Vaughn, Russell, Ky.
A. G. Wilkinson, Wayne

The West Virginia Medical Journal

Directed and Edited by the Committee on Publication

[The Committee on Publication is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible]

JAMES R. BLOSS, *Editor-in-Chief* - - - - - - - - Huntington

ASSOCIATE EDITORS:

WALTER E. VEST, Huntington — HARRY M. HALL, Wheeling — J. HOWARD ANDERSON, Marytown — C. A. RAY, Charleston

MR. JOE W. SAVAGE, *Secretary-Business Manager*, Charleston

Entered as Second Class Matter, January 1, 1926, at the Postoffice at Charleston, West Virginia

Vol. XXV — FEBRUARY : 1929 — No. 2

THE EFFICIENCY AND SAFETY OF THE PREVENTION OF GOITER *

By O. P. KIMBALL, A.M., M.D.
Cleveland, Ohio

This paper will be concerned only with the two points emphasized in the title, namely, the efficiency and safety of the prevention of endemic goiter. The experimental studies of Marine and his associates gave us the fundamental principles of prevention, which may be summarized briefly as follows:

(*a*) Endemic goiter is a deficiency disease.

(*b*) The enlargement of the thyroid, which we term *goiter*, is a compensatory hypertrophy due immediately to an iodin deficiency.

(*c*) Iodin deficiency may be absolute or relative, *i.e.*, an insufficient intake for normal body requirement, or an increased requirement due to growth, development, pregnancy, infection, etc. In either case there is insufficient iodin available to the thyroid to maintain its normal iodin balance.

(*d*) The normal thyroid contains from one to five milligrams of iodin per gram of dried gland. When the iodin content falls below one milligram per gram, cellular hypertrophy and hyperplasia begin and continue to the point of exhaustion and atrophy of the cells, or until the iodin balance is restored.

(*e*) The thyroid cells show an unusual affinity for iodin and apparently will not store up or hold significant quantities of the other heavy elements. Nor will any other gland of the body take up and store iodin in amounts comparable to the storage by the thyroid.

(*f*) The thyroid has the power to take up and store iodin from practically all known iodin compounds, whether administered by external application, by inhalation, enterally, or parenterally.

(*g*) There are certain periods in the life of an individual when the functional demands upon the thyroid are increased. Notably, during fetal life, at puberty, pregnancy, and the menopause. The increased demand results in a relative iodin deficiency. Pathological conditions such as long febrile diseases, malnutrition, chronic infections, etc., by increasing the demands on the thyroid, may create an even greater iodin deficiency.

Anatomic Cycle in Goiter
by David Marine

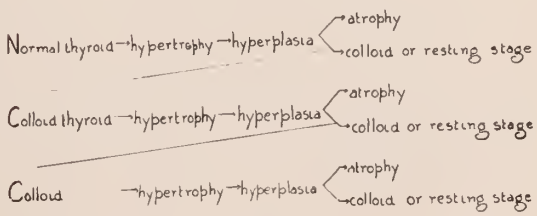


FIG. 1.

It is well known that in certain localities (endemic goiter districts) the amount of available iodin in food

* Read originally before the West Virginia State Medical Association at Fairmont on May 21, 1928.

and water is low. Since 1920 this point has been more accurately demonstrated by the researches of McClendon,[1] Young,[2] of the Michigan State Laboratories, and Von Fellenberg of Berne,[3] although the analysis of Chatin [4] in 1852 showed the same result.

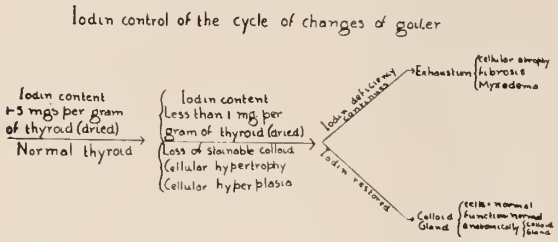


FIG. 2.

Actual chemical analyses [1] of water in certain sections of the lower Mississippi Valley have shown an iodin content from 10,000 to 18,000 times the amount contained in water in the Lake Superior district. Conversely, there is no endemic goiter in the same districts of the lower Mississippi, while 64% of the school children in the Lake Superior district were goiterous in 1924.

The prevention of endemic goiter in man on a large scale was instituted in the public schools of Akron by Marine and Kimball [5] in the spring of 1917, and continued through the school years to the spring of 1920. The results of this study have been reported and have served to demonstrate the fact that endemic goiter can be prevented in man as easily as in animals, by keeping the thyroid saturated with iodin. The results obtained in the schools of Switzerland, reported by Klinger [6] and others, corroborate our findings. From 1920 to 1924 we tried to apply in a practical way what we had learned from our experimental work in Akron, and during this time the prevention of goiter was taken up as a state health problem by New York, West Virginia, Ohio, Michigan, Utah, Oregon, and Washington. In the latter two states the work was under the direction of the State Health League.

In Michigan, goiter is endemic in every county. Because the State Department of Health was prepared and willing to study the problem, we have more detailed information here than in any other state. The first extensive survey was made by Dr. C. C. Slemons,[7] through the schools of Grand Rapids early in 1923, when 26,215 pupils were examined. This survey included boys and girls from the first to the twelfth grade, and the incidence of goiter was 30%. In the spring of 1923 prophylaxis was started through all the public schools (not the parochial). For this purpose every boy and girl was urged to take one iodostarin tablet per week. This method of prophylaxis became very popular, and soon a high percentage of the pupils were carrying out this measure consistently. In January, 1924, the State Department of Health decided to carry out a definite program of iodin determinations of the water supply and at the same time make goiter surveys in several counties. Following these studies they planned to carry out some method of prophylaxis with resurveys to determine the efficiency of the prophylactic measures. For this detail study, in order to represent average conditions in the state, four counties were selected, namely: Houghton on Lake Superior, Wexford and Midland in the interior, and Macomb on Lake Erie; all on a line diagonally across the state from northwest to the southeast.

Iodin determinations of every main source of drinking water in the county were made,[8] with the average of these determinations representing the

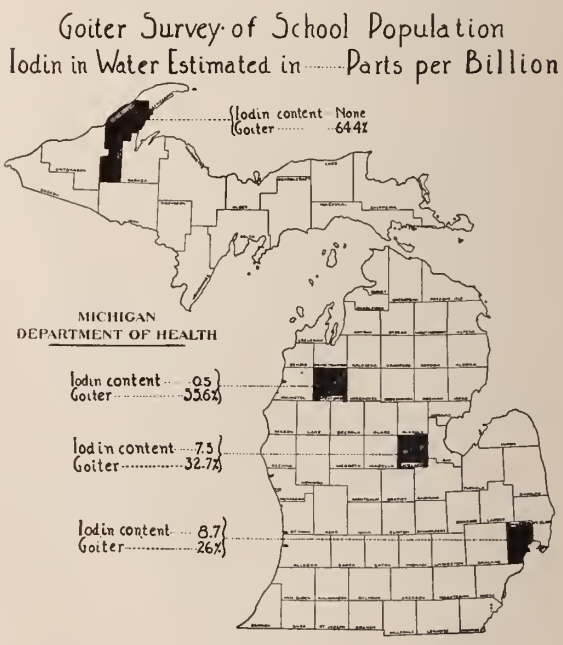


FIG. 3.

iodin content of the county. In Houghton county the iodin content of the water is marked "none" (Fig. 3). The incidence of goiter among the total school population in this county is 58.1% of the boys and 70.5% of the girls.[8] In Wexford county the iodin content of water was 0.5 parts per billion and the incidence of goiter among the school chil-

dren was 47.6% of the boys and 63.4% of the girls. In Midland county the iodin content of the water supply was 7.3 parts per billion and the incidence of goiter in this county was 24.4% of the boys and 41.1% of the girls. In Macomb the iodin content of the water was 8.7 parts per billion, and of 10,258 school children examined 20% of the boys and 32% of the girls had goiter.

From this study it is apparent that the incidence of goiter in any county is inversely proportional to the iodin content of the water supply.

Immediately following this survey, a state-wide campaign by the State Department of Health was made to emphasize the fundamental causes of endemic goiter and the principles of its prevention. In the spring of 1924 a special committee was appointed by the State Medical Society to work with the State Department of Health in carrying out this work. These two groups, representing the medical profession of the state, coöperated with the Wholesale Grocers' Association and the Salt Manufacturers' Association to the effect that, beginning May 1, 1924, the salt manufacturers produced and put on the market throughout Michigan an iodized salt containing one part potassium iodide to 5,000 parts of salt. The wholesale grocers did everything they could to bring about the sale of this salt only, and the State Department of Health was responsible for advising the public to use it.

The minimal amount of iodin needed in this endemic goiter district has never been determined. The Swiss Goiter Commission, in February, 1922, recommended an iodized salt containing one part of potassium iodide to 200,000 parts of salt. This would give an average of one-third to one-half grain of potassium iodide or 15 to 20 milligrams iodin per year. This amount was thought to be entirely inadequate, so the State Department of Health advised the amount that was being used through the schools of this country, namely, 400 milligrams of iodin per year. This is the amount a child gets from one iodostarin tablet (10 mgs. of iodin) per week for forty weeks (one school year). The average individual uses seven and one-half pounds of salt per year. Therefore, one part of potassium iodide to five thousand parts of salt will give each person ten grains of potassium iodide or 400 milligrams of iodin.

The Results of Prevention in School Children.—Our method of determining the efficiency of this prophylaxis was by reëxamination of school children in the same counties where examinations were made in 1924, after they had used only iodized salt for approximately four years. For practical reasons the counties of Macomb and Houghton were not included in the restudy in 1928, therefore we give only the following results:

1. In January, 1924, 3,645 school children of Midland county were examined, and at that time the incidence of goiter in all children was 41.6%. In January, 1928, a resurvey of the city of Midland alone was made. It was found that 91% of the homes of the public school children had been using iodized salt continuously since May, 1924. A total of 984 children were examined. This included boys and girls from the first to the twelfth grade. In this survey we found only eighty-eight enlarged thyroids, or an incidence of 8.8%. Even this marked drop in the incidence of goiter over a period of four years does not tell the whole story. Having made this survey myself, I can say that all but twelve of these eighty-eight goiters were small, firm adenomas (most probably congenital type), with the remainder of the thyroid normal in size. Twelve, however, were definite hyperplastic goiters, typical iodin deficiency glands. Of eighty-nine children who had not used iodized salt in the home, eleven, or 12½%, had hyperplastic goiters; while of the nine hundred who had used iodized salt continuously for three years only one, or 0.1%, had goiter. This case, which was most remarkable and was studied in some detail, was a seventeen-year-old boy, six feet two inches tall, who had grown almost a foot during the last year. During this time he had developed his goiter, in spite of the fact that he had been using iodized salt continuously. This case emphasizes that the iodized salt will not meet such emergencies as unusual growth. A severe or chronic infection might also bring on such an unusual demand on the thyroid.

2. An examination of all school children in Wexford county was made in January, 1924. Of 3,984 pupils examined, 55.5% were goitrous. In January, 1928, a reëxamination of all the schools in the city of Cadillac (the county seat) was made. Of 1,553 children examined only 17.3% had goiter.

3. In the spring of 1923 the whole school population of the city of Grand Rapids was studied. There were 26,215 pupils examined, with a total percenter of goiter of 30. In 1928, 39,435 pupils were studied in the resurvey, with the total percentage of goiter of 9. Here, again, only half of the truth is told, even in this marked reduction from 30% to 9% in four and one-half years. As stated

earlier in this paper, the parochial schools did not participate in the program of prophylaxis as carried out in the public schools by the use of one iodostarin tablet per week from 1923 to 1926. Also, comparatively few of the families have been using iodized salt in the home. In contrast, 91% of the homes of the public-school children were using iodized salt. Quite unintentionally, we had carried out an experiment which again emphasized in no uncertain terms the efficiency of our prophylactic measures. In five parochial schools the adolescent boys and girls, sixth to twelfth grades, inclusive, showed the same percentage of goiter as we found through all the schools in 1923; 42% of the girls and 31% of the boys had goiter, a total incidence of 36.5%. In contrast, the same age groups (junior and senior high schools) of the public schools showed a total incidence of goiter of 18.1%. We examined 4,234 boys and girls from first to twelfth grade in the five parochial schools, of which number 1,032 had goiter, of a total incidence of 24.3%, while of the whole school population, 39,435, only 9% had goiter.

In examining the children of the parochial schools, especially the adolescent boys and girls, we found hyperplastic goiters in approximately the same proportion we found in our earliest surveys. These are active hyperplasias, due to an iodin deficiency. Of the 1,032 goiters in this parochial school group, 14% were hyperplastic. Among the public school groups we rarely found such a gland, and I feel sure that, had it been possible to study each of these, we would have found that they were among the 9% who had never participated in the prophylaxis, or they would have shown some unusual thyroid demand such as described earlier in this paper.

A survey through the public schools in 1926 revealed the fact that 91% of the homes were using iodized salt continuously. The use of the iodostarin tablets was stopped, therefore, and the general use of iodized salt in every home was advised.

4. The study at Muskegon, through the same period of years and under similar conditions, was made by Dr. F. B. Marshall,[9] using the same standards and classifications. In 1924, 7,710 school children were examined; of these, 2,570 (33.3%) had goiter. In 1928 he examined 8,250, of which 887 (10.7%) had goiter.

Altogether we saw seven cases of hyperthyroidism in children; four in the resurvey of 50,134 school children and three in the special goiter studies in adults. One at Midland used iodized salt after the hyperthyroidism was well established, and during the same time she was taking Lugol's on prescription as treatment for the hyperthyroidism. The three seen in Grand Rapids were in the parochial schools and it was established beyond doubt that they had never

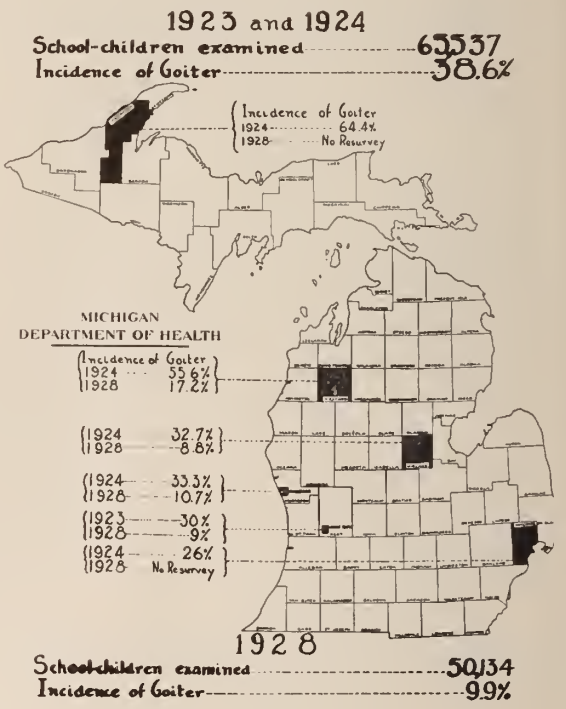


FIG. 4

used any iodin either as prophylaxis or treatment.

Of the three cases seen during the special study of adults, the first, a girl aged eight, seen in Grand Rapids, had definite exophthalmos and other symptoms at the age of five, and it was one year later that they started to use iodized salt, thinking it might help her goiter. She was also taking iodin drops (Lugol's) from her physician throughout the same period. The second, a girl of 16, seen at Houghton, has had a severe hyperthyroidism since the age of 12, at which time she was in bed for six weeks with the same symptoms she has at present. She has been using iodized salt for two years, yet her hyperthyroidism has existed for four years. The third case, a girl of 14, seen at Trimountain Hospital, Houghton county, was one of a family of seven where each had a large congenital goiter. The mother also had a large goiter. They had used iodized salt in this home for four years continuously, and two years ago this child developed a severe hyperthyroidism with marked exophthalmos. The family physician stated that the symptoms at first were those of chorea, coming on at the beginning of puberty (age 12) and followed by the develop-

ment of hyperthyroidism. He felt that puberty and infection were the forerunners of hyperthyroidism in this case, and that the iodized salt could not possibly have been a factor. However, since she had used iodized salt previous to the onset of symptoms, she is classed with those (Class 1) in whom iodin *might* have been a factor in producing the disease.

Each of these seven children had a large multiple adenomatous goiter with a persistent thyro-glossal stalk. We saw no cases of hyperthyroidism in children without a previously existing congenital goiter, and, therefore, conclude that the hyperthyroidism is only a part of or resulted from the endemic goiter. McClendon,[1] from the Draft Board statistics, has shown that the incidence of exophthalmic goiter throughout the United States is proportional in every locality to the incidence of endemic goiter. We appreciate the fact that hyperthyroidism is sometimes seen without any preëxisting thyroid abnormalities; yet in these seven children we feel that the hyperthyroidism would have been prevented by keeping the thyroid gland histologically normal. They serve, therefore, to emphasize the importance of a method of prophylaxis which includes fetal life, early childhood, adolescence, and pregnancy; briefly, the entire period of growth and development.

We are privileged to report here the observations of the physicians of Houghton county doing obstetrics and pediatrics. The report [9] was given by Dr. W. A. Manthei, of Lake Linden, who states that, before prophylaxis became general, it was not at all uncommon to see babies with definite goiters at birth. He and his associates discussed this fact and looked forward with eagerness to see if the general use of iodized salt, or iodin prescribed throughout pregnancy, would change this condition. To date they have not seen a single case of congenital goiter where the mother has used iodin. From their observations so far the continued use of iodized salt is sufficient, yet many prescribe additional iodin during this period, such as one grain of sodium iodide or one to two iodostarin tablets per week.

We have now the accumulated data of many thousands of children, both in this country and in Europe, who have carried out prophylaxis of goiter for years under the careful supervision of physicians. There has never been a case of hyperthyroidism reported where those in charge felt that hyperthyroidism was brought on by the prophylactic measure, and, judging from the literature on this subject, it seems to be universally accepted now that there is no possibility of producing the disease *in children* by the continuous use of iodin in amounts sufficient to prevent goiters.

The Effects of Iodized Salt on Adults with Goiter.—There are many statements in medical literature to the effect that iodin, even in such small amounts as is present in iodized salt, induces hyperthyroidism in adults with goiter. None, however, are based on sufficient scientific data to be of much value. Coindét,[10] who was the first (1820) to advise iodin in treatment of goiter, noted bad effects and urged precautions in this treatment in 1821. Gairdner [11] gave a classic account of this condition in 1824. Rilliet,[12] of Geneva, was the first to stress the possibility of harm from the use of iodized salt. He gave a paper on this point before the Academy of Medicine at Paris in 1858, in which he describes four cases, typical of what we see today and which are commonly called toxic adenomas. They had been using potassium iodide in their cooking salt to the amounts of one part of potassium iodide to ten thousand parts of salt. The author is not clear in this paper as to the relation of the use of iodized salt and the duration of the symptoms of toxic goiter. He also describes two cases wherein the patients had left the mountainous region of Geneva and had gone to the seashore, and, breathing the sea air which is heavily laden with iodin (according to the theories at that time), had become as toxic as the two patients who had used the iodized salt. M. de Boinet [13] wrote a letter to the commissioners of the Academy, Messrs. Châtin and Trousseau, in which he points out the fallacies and dangers of the deductions by Rilliet from such a small number of cases. He doubts the statement that iodin in the sea air would be sufficient to cause such immediate toxicity, and prefers to believe that the condition was already present and brought out by some factor other than such minute quantities of iodin. He feels, too, considering the large number of goiters that were being treated by Rilliet and his many friends, and from a country where goiter is so prevalent, there should be more than two cases affected by this treatment. However, Rilliet's warning note as to the possible dangers of the use of even small amounts of iodin in the treatment of goiter carried much more weight than the logical deductions of de Boinet. The medical profession immediately stopped the use of iodized salt, which had been started by M. Grange of Geneva in 1840.

The disease which Rilliet recognized and attributed to the use of food iodin continued to develop even though the food iodin was stopped. By 1900

toxic goiter had become one of our common diseases, and with the progress in the surgery of the thyroid we have had a steadily increasing number of articles on goiter, its cause and treatment. In 1900 Dr. Breuer,[14] of Nothnagel's Clinic, described what he thought was Iodin Basedow. In 1910 Kocher [15] set forth at length the untoward effects of iodin in exophthalmic goiter. In 1911 Marine and Lenhart [16] reported the use of iodin in exophthalmic goiter. They carefully followed seventeen cases and did not see any of the injurious effects commonly reported. They advised amounts of iodin sufficient to meet the physiological needs. In extreme cases they used syrup of ferrous iodide in doses of 5 minims daily for the first week, then 5 minims twice daily the second week and 10 minims twice daily the third week. In mild cases the initial dose might be 5 or even 10 minims twice daily. In criticizing Kocher's work, just cited, they state: "We believe such effects are due to the abuse and not the physiological use of the drug."

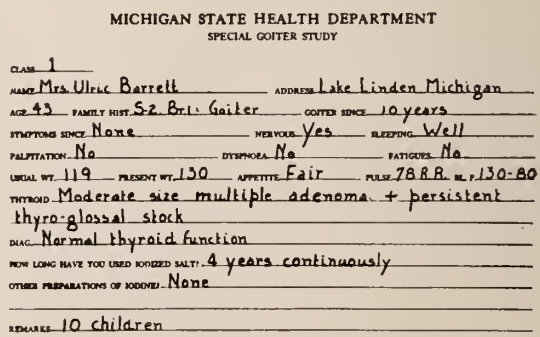
Surgeons were not convinced by the apparent safety with which Marine and Lenhart used iodin in physiological amounts in hyperthyroidism, so they continued to teach that iodin should not be given in any case of hyperthyroidism and very cautiously to any adult with an adenomatous goiter, for fear of starting hyperthyroidism. Many attempted to restrict their patients to an iodin-free diet. Plummer [17] was the first to advocate the use of iodin in large amounts to control severe hyperthyroidism. Since the advent of this measure, in 1924, surgery of the thyroid has undergone tremendous changes. Practically every surgeon now uses large amounts of iodin as a preoperative measure to control, temporarily, the hyperthyroidism and to make the operation safe, and as a postoperative measure for several months to prevent thyroid hyperplasia.

During the past three years there have been many articles in the medical and non-medical literature emphasizing the dangers of the use of iodized salt. We can find no scientific study on this point in the literature from the time of Rilliet to the present, and recent articles have added to the confusion by reporting only the few cases of hyperthyroidism who had used iodized salt, saying nothing about the vastly greater number of cases of hyperthyroidism seen during the same period who had not used it. To answer this question with scientific data was the purpose of the study now presented. To understand the goiter problem we must study it as a whole; not just a few isolated goiters. To this end we arranged to study the whole goiter population in several counties of Michigan where the incidence of goiter is comparatively high, and where the majority of the population has been using iodized salt for the past four years.

Through the State Department of Health we interested the county medical society in such a study, and where there was no county health department the whole survey was arranged by the medical society. The first study was arranged by the Wexford County Medical Society, held at Cadillac on December 15, 1927. It was announced in the paper that a goiter clinic for adults would be held by the State Department of Health and the Wexford County Medical Society. Every adult who had goiter was urged to come in and receive a careful study of his goiter with diagnosis and suggestion for treatment. Also, each physician called up his goiter patients and advised them to come to this study and bring any friend or neighbor who had a goiter problem. The next study was held at Grand Rapids from February 10th to 16th, inclusive, and the third in Houghton county, April 23d to 26th, at Calumet, Hancock, Trimountain, Lake Linden, and at Houghton.

A most valuable phase of this study was the coöperation and active participation by the local physicians. Our statistics are much more valuable because of the fact that in more than one-half of the cases studied the family physician was there to give us previous history both as to the onset of symptoms and the medication.

This study was made to determine whether iodin in any amount and especially in amounts used in the prophylaxis of goiter, such as iodized salt, could be an etiological factor in the production of hyperthyroidism. Our classification was based entirely on the relation of the onset of the disease to the use of iodin. That is, if a patient had been using iodized



MICHIGAN STATE HEALTH DEPARTMENT
SPECIAL GOITER STUDY

CLASS 1
NAME Mrs. Ulric Barrett ADDRESS Lake Linden Michigan
AGE 43 FAMILY HIST. S-2. Bro: Goiter GOITER SINCE 10 years
SYMPTOMS SINCE None NERVOUS Yes SLEEPING Well
PALPITATION No DYSPNOEA No FATIGUES No
USUAL WT. 119 PRESENT WT. 130 APPETITE Fair PULSE 78 R.R. BL. P. 130-80
THYROID Moderate size multiple adenoma + persistent thyro-glossal stock
DIAG. Normal thyroid function
HOW LONG HAVE YOU USED IODIZED SALT? 4 years continuously
OTHER PREPARATIONS OF IODINE? None
REMARKS 10 children

FIG. 5.

salt for six months and had had definite symptoms of hyperthyroidism for a year, he was classed as having used no iodized salt, since he had not used it previous to onset of hyperthyroidism. We found it necessary to make four distinct classes and to classify each case before dismissed.

Class 1: Those who have used iodized salt alone for a period of one to four years. Eighty-eight per cent of those in Class 1 have used iodized salt continuously for four years, and twelve per cent have used it at least one year.

Class 2: Those who have used no iodin, or, at least, none before the development of hyperthyroidism.

Class 3: Those who have used iodized salt continuously, but also used other forms of iodin, such as external application, Lugol's solution, or iodin in any form.

Class 4: Those that took iodin on prescription or otherwise, but have never used iodized salt.

The fact that only one-half to three-fourths of the people of Michigan are using iodized salt forms the basis of an excellent experiment. While studying a group who have used iodized salt for a period of years, we also have a group who, purposely or otherwise, have not used iodin in any form. All of the cases here are adults with goiter, many of which are large, adenomatous goiters of long standing. A brief history of each case was kept and a copy of the same left with the county medical society or the county health department for the benefit of the local physician. A copy was also sent to the State Department of Health for study. A concise summary of the 1,229 cases studied is found in Chart 1.

CHART I.

Diagnosis was made before classifications.

	CLASS 1	CLASS 2	CLASS 3	CLASS 4
Number of cases studied	655	419	114	41
Number of cases of hyperthyroidism	27	233	20	8
Percentage of hyperthyroidism	4.1	55.5	17.5	20.0

We find, in Class 1, that 27 of a total of 655 developed hyperthyroidism after the use of iodized salt had been started. In many of these cases we found other conditions that seemed more important in the etiology of hyperthyroidism than the use of iodized salt. For instance, three patients developed exophthalmic goiter during pregnancy, two immediately after severe throat infection, and several followed severe nerve strain or shock such as is so often seen as a forerunner of this disease.

In Class 2, 419 were examined who had used no iodin or at least none previous to the onset of definite symptoms of hyperthyroidism. We have here exactly the same factors that we have in Class 1, except that those in Class 2 have not used iodin; yet the percentage of cases of hyperthyroidism is 55.5, compared to 4.1 of cases developing hyperthyroidism in Class 1. This difference suggests that iodin in amounts sufficient to keep the thyroid normal histologically will thereby keep it normal functionally and actually prevent hyperthyroidism.

In Class 3 we find that 17.5% of those examined have hyperthyroidism, and in Class 4, 20%. At first it would appear that it was the amount of iodin they were getting which caused the increase over that in Class 1, but from studying the cases carefully I am sure that this apparent increase is due alone to the time element and not the amount of iodin taken. Most of these patients have been using iodin externally, as the tincture, iodex, or iodized oil, or the iodides internally, for as long as ten years—so long that it would be impossible to say in any case that the symptoms of hyperthyroidism preceded the use of iodin. For instance, we saw three women at Cadillac, of whom two had used 15 grains of potassium iodide and the other five grains of sodium iodide daily for ten years. All had adenomatous goiters, and two were taking iodin as treatment for goiter while the third took it as treatment for hypertension. None had symptoms of hyperthyroidism, yet their thyroids were as firm as those described by Breuer in his description of Iodin Basedow. One woman, seen at Grand Rapids, had rubbed into her goiter (one adenoma was six inches in diameter) a copious amount of iodized oil daily for the past ten years, with no apparent harm. Several patients had taken Lugol's (ten to thirty drops daily) for as long as twelve and eighteen months, with no apparent ill effects. Yet 28 of 155 who had used iodin in large amounts over a long period showed hyperthyroidism.

At a meeting of the Wexford County Medical Society, held just after the study at Cadillac, where practically every physician participated in the study, the members voted unanimously to send word to the State Department of Health that they had never seen a single case in which they could say that iodized salt had induced or injured a case of hyperthyroidism. This same sentiment was expressed by the men of Houghton county at a meeting following the study. The meeting of the Kent County Medical Society was held before the study was made, and, therefore, no expression was given.

Studying the goiter problem of a whole community, we are impressed by the number of cases

where hyperthyroidism has developed on a long-standing adenomatous goiter. A relatively high proportion of these show what Marine,[5] Graham, and others consider evidence of congenital goiter, a persistent thyro-glossal stalk or a fetal adenoma. This type of case has long been called toxic adenoma, but, as Graham[18] has recently emphasized, the difference between it and acute exophthalmic goiter is one of degree, not of quality. And, further, it is most remarkable, the length of time that many of these patients will go undiagnosed and untreated. Many of them have never even sought medical advice. It is not at all uncommon to have them state that the symptoms have existed for six, eight, and even ten years.

Summary.—From our observation of all adults with goiter who came for study in three different communities, we feel sure there is no basis for the statements that iodized salt *might* induce hyperthyroidism in long-standing goiter. By study and comparison of the twenty-seven cases of hyperthyroidism, or 4.1% of those who had used iodized salt and later developed the disease, with the larger number 233 or 55.5% of those who *had not* used iodin, yet developed the same condition, we feel that the etiology of hyperthyroidism lies within the individual. We also feel that these etiological factors are increased or aggravated by endemic goiter, and by preventing endemic goiter we are, thereby, preventing many cases of hyperthyroidism in the future.

This is the beginning of an extensive study which has been outlined by the Michigan State Department of Health to establish the truth of the situation. From our studies thus far, prophylaxis of goiter as it has been carried out in Michigan is very efficient and entirely safe.

Discussion

DR. DAVID LITTLEJOHN (Charleston): Mr. Chairman, fellow members of the West Virginia medical society: I assure you it has been a great pleasure to me to listen to the remarks that have been made by Dr. Kimball. Dr. Kimball is no stranger to me. He has just rehashed things this morning that have been more or less familiar to me for a good many years.

Before I became a citizen of West Virginia, I was a citizen of Michigan, and I am pretty well familiar with the territory which he has outlined and the survey which he has made. Dr. Kimball hasn't told you half the details in regard to the goiter situation, especially in the northern peninsula of Michigan, where it not only affects the human race but affects practically everything belonging to the animal kingdom. In that section of the country you will find the horses and the dogs going around with goiters that are almost a load sufficient for them to carry.

You will find, if you study back into the history of the thing, that, years ago, they started a sheep industry in the upper part of Michigan, and after the first year or two they found it became so unprofitable, due to the fact that the lambs died almost as soon as they were born because of the prevalence of goiter, that the sheep industry was practically discontinued in northern Michigan.

Somehow or other, they started to use rock salt in the pastures to which the sheep had access. Immediately following that, it was found they were able to raise sheep to a very profitable extent, and today the sheep industry in the farming areas of northern Michigan is one of the most important agricultural industries they have there, and goiter among the lambs has, practically speaking, entirely disappeared.

I used to be health officer in Marquette county, in northern Michigan, which borders right on Lake Superior. There, I think, as Dr. Kimball has told you, the water supply is nothing more nor less than melted snow and ice. The snow and ice runs down and forms the supply, which gives us a quality of water equal to distilled water, which is absolutely free from salts of any kind, including iodin.

During my time up there we made a survey of the school children in the city of Ishpeming, and we found sixty to sixty-six per cent of the boys and girls with well-developed goiters. Goiter prevention among the schools in that city was started at that time. When I left there to come to West Virginia, in January, 1923 (that was before even a survey was started—the general state survey in Michigan), there was a very perceptible reduction in the percentage of goiter among school children, and that was the result of the work we did in the two years prior to 1923.

Just the other day, I learned that there is an industry in the state of West Virginia employing somewhere in the neighborhood of 950 girls and women. A survey was made of these girls and women about four or five years ago, and out of those 950, nine hundred were examined for positive goiter; there were 129 simple goiters, one exophthalmic goiter and one adenoma, making a total of 131 cases of goiter found among these nine hundred.

Immediately following the survey and the discovery of goiter, they were started on iodostarin, receiving one tablet a week, and the result was that

of the 127 who received the treatment, in 75 cases the goiter entirely disappeared, and in 124 of the cases there was a marked improvement in the goiter condition.

During that time, and since that time, not a single case of toxic goiter has developed in the 127 cases receiving the iodine treatment, and there hasn't been a single case which has been operated upon, showing that, even in these adult cases in which we have the simple goiter condition existing and where they have received the iodine consistenly, there has been absolutely no indication whatever of aggravation of the symptoms, and certainly no production of toxic conditions, so far as the goiter situation is concerned.

I want, personally, to thank Dr. Kimball for his message this morning. I know the sincerity with which all his work has been conducted, and it has been a great pleasure to me, and I am sure it has been to the state medical society of West Virginia, to have him with us.

DR. R. H. PADEN (Parkersburg): My experience with goiter prevention and goiter treatment work extends over four years in the public schools at Parkersburg, and during the four years that I have been engaged in this work the goiter problem has been one that has been given serious consideration.

We have approximately 5,400 school children in the schools there, and out of those 5,400, among the girls, who number 3,200, probably 50 per cent of them have simple goiter. We have a few adenomatous goiters, and, I am sorry to say, a few of the exophthalmic type among the high-school students especially.

When I first entered the school work every girl student was given a card at the beginning of the school year, with a message to the parent, explaining that by the use of one-sixth of a grain tablet of iodine once a week in the schools we felt that goiter could be prevented. Boys were not supplied with the goiter cards unless they requested them.

The second year this plan was carried out in exactly the same way. Then the iodine salts came into being, or we began to hear a great deal about them, and the discussions began for and against the use of iodine in the schools and in the homes.

About two years ago I heard Dr. Crile speak at Huntington before the Medical Association. He condemned the use of iodine salts in the home, stating, as I recall, that there had been a 10 per cent increase in the number of toxic goiters reporting to his clinic in Cleveland since iodine salts had been introduced.

Being a young man, and not greatly experienced in the treatment of goiter and in the use of the iodine salts and of the iodine tablets, I was greatly impressed, of course, with these remarks. So, the following year, I did not permit any child to take the goiter treatment in the schools until after he or she had been inspected by the school physician. I may be right, or I may be wrong. I am always open to conviction. I did this as a preventative measure, in case it is finally proven that the use of iodine salts or the use of iodine in children who have already developed goiter is dangerous. Then I shall have played safe. If it is proven (and Dr. Kimball's remarks are very convincing) that there is no danger, then I shall acknowledge that I am wrong. However, the question is still open for further study and it probably will not be long until very convincing arguments on one side or the other will be worked out.

Since the goiter cards issued by schools explained to the parents why this was being done, we found that it was very easy to get them to sign the cards, giving permission for us to give the treatment in the schools. But one of the difficulties (and one thing I should like to ask Dr. Kimball about) that we have encountered is this: They have a rule in the schools there that when we give out the iodine tablets the child can not take a drink of water. The teacher gives out the tablets in the room and stands there while the child swallows it. It has always been a question in my mind as to how many of those children hold the tablet in their cheeks and then throw it out when they go back to their seats. I should like to ask Dr. Kimball that question, as to the exact method by which the treatment is given in the schools.

DR. R. A. ASHWORTH (Moundsville): I think we ought to give the time of Dr. Simmons to Dr. Buford, of Charleston. I overheard a conversation in the lobby this morning to the effect that he had been to the congress over in Geneva, and had studied that proposition there.

DR. W. S. FULTON (Wheeling): I have been very much impressed with this startling and almost revolutionary paper that Dr. Kimball has presented to us this morning. The time for discussion is so limited that I can't go into it thoroughly, but I was very much impressed with the thoroughness with which the doctor had done his work and with the fact that he has come here to defend his statistics.

As I grow older, I become more impressed with the number of supposedly scientific articles which are presented to us in our different journals, which in a year or two are turned back and not accepted. That is the point that the doctor brought out this morning. It is too bad that we, as a medical profession as a whole, can not have some happy meeting ground on which these subjects can be worked out thoroughly, or at least more thoroughly, before our journals are allowed to publish them.

The public is going to go on suffering, I suppose, until 1958. The doctor referred to the year 1958. It takes about that long for a truth to get over to the medical profession.

When I heard the doctor make the statement regarding our adult goiter patients, I began to think of the number of patients who were taking iodine salts. That is the thing we were looking for. That is what every doctor looks for when a toxic goiter patient comes to his office. The first question he asks is, "Have you been taking iodine?"

When we think of the things that do disturb the balance, we overlook the fact that some great tragedy, some great sorrow, or some great business reversal, will have just as much effect, or a greater effect, in disturbing the equilibrium of this gland as iodine has.

So, Dr. Kimball, I congratulate you on your courage. I hope that you will go on, and I hope that those who are doing the same class of work will be as exacting in their demand for proper statistics as you have been, and that somewhere or somehow there will be men of your calibre who will have the courage to get together and direct us so that we can give the people in these infected areas a square deal. We are certainly not doing it now. This is true with every branch of medicine, practically.

A few years ago we got the report from our different large surgical centers on the treatment of gastric ulcer, for instance. It was rushed into print and we all followed it like a flock of sheep. At the end of five years that method was all wrong. We thought we had to ligate the superior thyroid. We thought we had to steel the goiter. Now, at the end of five or ten years, that is all wrong.

So I am glad, Dr. Kimball, that you are here. Your message is fine and will do as much good, I am sure, as any that will be delivered to this society.

DR. W. R. GOFF (Parkersburg): Members of the State Medical Association: I regret that I have only about three or four minutes in which to discuss this paper, but there are some outstanding features in it that I must challenge.

First, I want to challenge the statistics Dr. Kimball gave on goiter in the state of Michigan. He said that at one period there was a goiter incidence of 38.8 per cent and four years later only 9.9 per cent. I fear lest my friend, Dr. Kimball, would have you believe that a large percentage of those goiters were cured by a prophylactic dose. He does not tell you in those statistics how many patients were reëxamined. I have my serious doubts about those statistics. To me, they are absolutely not convincing. I am sure they are to Dr. Kimball, because he produced them.

I just want to leave these two points with you: I do believe in the prophylactic treatment of goiter administered to expectant mothers, and that carried out after the child is born, to the age of 25, or about that time. That it is of value is true. But that a prophylactic dose reduces goiter from 38.8 per cent to 9.9 per cent is unbelievable to me.

This is the point I wish to make: I do not believe that prophylactic or therapeutic iodine has cured an adenomatous goiter, and it never will. I make that statement unreservedly.

In the experience I have had, which has been somewhat limited as compared with that of Dr. Kimball, I have watched my cases carefully. I only do surgery and not preventative medicine, but not a single goiter in my experience has been cured by any form of iodine, whether it is iodine salt, whether it is iodostarin tablets, or whether it is one of those famous goiter cures that are advertised from coast to coast. Dr. Kimball did not tell us whether he asked his patients if any of the famous goiter cures which get newspaper publicity had been used, and one of the principal iodine sources come from them. May I name them, with your permission, or [illegible] to forget them? Rocks, Boso, Werner, Sorb[illegible] half a dozen more.

I have seriously objected, in my short experience in West Virginia, to the Journal carrying an advertisement of iodized salt, because if you will look on page 72 in the December, 1927, issue of the magazine, *Physical Culture*, you will see an ad that reads: "Keep Slim. Use Iodized Salt." I could produce hundreds of such illustrations.

Two years ago I tried to create an interest in this society in a study of goiter in West Virginia, but, unfortunately, one or two health officers in this state who are not familiar with the problem passed it by.

This is a live problem in West Virginia, and therefore I am openly criticizing Dr. Kimball's statistics, because criticism is a thing that brings results. If we were to believe these statistics as they have been presented to us, we might be led to think that every patient and every child in West Virginia should have prophylactic iodine.

I believe that this problem should be taken more seriously, because there are too many goiter patients in West Virginia who are told, "Yes, I can cure you."

In my own locality, I sent a patient to more than fifty doctors to find out what could be done for goiter. Twelve of them said, "No, I can't do anything." Others said, "Yes, I can cure you." After years of persistent treatment the goiter was still present.

This is a real problem and it needs discussion. The incidence of hyperthyroidism in the state of Michigan is staggering. There is some reason for it, and I believe that if the causes were ferreted out carefully iodized salt would be found to be one of the contributing factors. Therefore, I believe that it should not be administered after the age of twenty-five.

DR. J. R. SHULTZ (Charleston): I should like to know if Dr. Kimball has a report on his questionnaire from Dr. Crotti, of Columbus, and Dr. Crile, of Cleveland, as to the incidence of goiter.

I agree with Dr. Goff that the use of iodine is dangerous, and I should like to ask Dr. Kimball if there are no hyperthyroid symptoms developed from big doses of iodine, how he explains the fact that in large goiter clinics where Lugol's solution is used in preparation of patients for surgical operation the slogan has been adopted that Lugol's solution is the instrument of the surgeon and not of the medical man and should not be used by the medical man; and why is it that, if you have used Lugol's in sufficient doses to produce an operable case, if that Lugol's is continued, your patient becomes much worse than he was before?

DR. R. B. BAILEY (Wheeling): I should like to make just one statement:

At the University of Michigan, in a pathological study of approximately 1,000 goiters by Dr. Warthin, after iodine and iodine salt had been used, he found no positive evidence that adenomas were made toxic. The only thing he would say was that there was probably in some of them a tendency for the adenoma cells to be more embryological in character, but he would not say that adenomas were made toxic following the use of iodine in the state of Michigan.

DR. B. S. PRESTON (Charleston): I should like to have Dr. Kimball's opinion as to the effect on the coming generation if iodine was universally given to expectant mothers.

DR. R. K. BUFORD (Charleston): Gentlemen of the State Medical Association: My experience with goiter has been largely surgical, and I wish to emphasize that we are speaking from personal experience, which doesn't oftentimes mean very much. As Dr. Kimball has very forcefully brought out, two or three cases don't mean a thing.

Every student of goiter feels greatly indebted to our two great thyroid physiologists, Dr. Dave Marine, and our essayist, Dr. Kimball.

Goiter is a deficiency disease which is practically checked throughout the thyroid belts today. Hypertrophy occurs in every thyroid gland where the thyroid content is below one-tenth per cent of 1 gm. of dried gland. McCarson, at the International Goiter Congress in Berne, Switzerland, last year summarized his article briefly by stating (we will recall that he is the chief exponent of the infectious theory of goiter) that he had come to this conclusion: that he believed a judicious blending of the two theories of iodine deficiency and infection would ultimately solve our problem.

I was interested in Dr. Kimball's remark about syphilis being one of the activating factors of hyperthyroidism. In a series of cases a few years ago, we did routine Wassermans on all patients who came to our hospital, and we found syphilis present in twelve cases, which we thought were activating influences.

Time will not permit my discussing the changes which iodine brings about in the thyroid gland. I wish to discuss that fully tomorrow in a paper which I am to present. I think there is where we are having our greatest trouble.

Dr. Kimball is presenting a most interesting problem. He is not discussing clinical medicine. And there is where we are trying to confuse the problem, by injecting a few clinical impressions and interpretations into this magnificent scientific investigation of his.

DR. R. A. IRELAND (Charleston): Mr. President, in 1919, 1920, and 1921, following the example of our essayist in Ohio, prophylactic treatment was carried out at Charleston, West Virginia, throughout the public schools. At the beginning of that test, approximately 50 per cent of the girls were reported as having signs of goiter. Sodium iodide

was given in the prophylactic dose to all of the girls in the schools who would accept that treatment over a period of three years.

At the end of that experiment, observations were made by the same doctors who had carried out the first observations, and they reported a reduction of about 25 per cent in the total number of goiters of all types among the girls in all the schools of Charleston. And because I have been actively identified with the profession of the city since that time, especially with one hospital where a fair share of the cases would be brought for operation if they had been activated by that sort of treatment, I feel secure in saying that that prophylactic treatment carried out over those three years did not have any bad effect. I am not saying absolutely that no single case was made worse, but I am saying that I know there was an improvement in the goiter situation because of the prophylactic treatment carried out with sodium iodide.

DR. P. F. FOARD (Charleston): I have been interested in this discussion here today. I was particularly interested in Dr. Kimball's paper. I came here to hear that paper. I don't mean to say that I am not interested in the other papers on the program and do not expect to attend to hear them, but Dr. Kimball's paper is what brought me here.

I am connected with the Public Health Service and in the last eight or ten years have had the opportunity to be in a great many states over the country, and for the last five or six years I have been particularly interested in goiter.

In 1919 I was sent out to Montana. I remember the first day I got off the train and walked down the streets of Helena, I saw a great many (girls particularly) persons with goiter. A short time after that I asked the state health officer about the prevalence of goiter in that state. He said no study had ever been made of it in the state. He didn't know what percentage of the people did have goiter, but he knew that a great many of the people in Montana had it.

A year and a half later we decided to make a very quick and superficial study to try to determine the prevalence of goiter in that section of the Northwest. We selected four counties, one of which was on the Canadian border, in line with the Rockies as they run south; one of which was in central Montana, directly in the Rockies; one of which was east of the Rocky range, and one of which was in the Big Horn Mountains, which are a little east of the Rocky range. We examined 12,000 children and we found that the prevalence of goiter ranged as high as 74 per cent in the high schools and junior high schools in one county, and as low as 20 per cent in another county. That was among girls. Our highest figure was 74 per cent in one county among the girls, and 53 per cent, I believe, among the boys in the same county. In the county having the least goiter, the figure was 30 per cent.

As I said, I have been very much interested in the discussion of you medical men with reference to goiter. I don't attempt to offer any suggestions as to what we should do. I heard a very interesting discussion at the Southern Medical Association a few months ago with reference to pellagra. Some of the medical men thought that pellagra was not a dietary condition; others thought that it was. Having been in the Mississippi flood area, and having been directly interested in the distribution of the proper sort of diet with reference to pellagra, I was convinced that diet had a great deal to do with the treatment of pellagra, and I am willing to accept that treatment as long as it reaches more people and gives better results than anything else that has been submitted to the present time.

I feel exactly the same way about goiter. I suggested in one of these Montana cities, of around 25,000 population, that prophylactic treatment be carried out. It was carried out by the use of iodized salt and iodostarin. I was back there a year ago and asked about the results of that treatment over a couple of years. The health officer told me there had been a marked improvement. I went into several of those schools, myself, to look over the children after five years of that treatment. It was five years since I had been in there. And I thought, too, that there was a marked improvement in the condition of those children. There certainly was not nearly as much goiter as there had been five years before.

At the present time, I understand, a study is being made in a number of the northwestern states. I know that Washington has a lot of goiter. I know that Oregon has a lot of goiter, and that northern California has a lot of goiter. In fact, practically all of those states have a very high prevalence of goiter. I have seen very little of it in this state, though I have seen some of it.

I believe that we should follow the prophylactic treatment method, using iodine, until some better method is suggested, because I think, from a public health viewpoint, goiter is one of the biggest problems we have in certain areas of the United States.

It is a problem that everybody should consider—one that the practitioners as well as the public health men should consider of first importance and to which they should give particular attention.

DR. W. A. MCMILLAN (Charleston): Mr. Chairman, our society feels greatly indebted to Dr. Kimball for this excellent treatise. I like everything about Dr. Kimball's treatment except one thing, the word *statistics*. I think that statistics are important or of value for only one thing. That is, if a fellow has a set of false teeth and he can say "statistics" without having them fall out, it indicates that they are pretty good teeth.

I have been going over the country a good deal and I have made a number of interesting observations, and they have been confirmed by the remarks of our esteemed physician, Dr. Grenfell, of Labrador. Grenfell has visited this country. We have had the pleasure of having him visit our local society at Charleston. He stated that during his thirty years or more in that excellent missionary work he has conducted along the Labrador coast, he has not seen any cases of thyroid disease.

It has been my custom for the past twenty-five years to visit the Atlantic coast every summer in a section somewhat similar to that in which Dr. Grenfell is located, and it has been my pleasure also to be with the medical men of the northern section of the province of New Brunswick, and the Gaspe and Bonaventure coasts of the province of Quebec. In conference with these physicians last year, they told me that there is almost a total absence of thyroid disease along that coast.

That brings out pretty clearly the theories advanced by Dr. Kimball with regard to the therapy that the patients derive through the iodide atmosphere of that locality.

I want to say again that I thoroughly enjoyed the doctor's paper. As one of the gentlemen said, a certain section of our society takes a surgical view of these things. Dr. Kimball presents entirely a prophylactic view, and one that I think every man is going to benefit by.

DR. O. P. KIMBALL (*closing the discussion*): Dr. Littlejohn didn't ask any questions, so I shall proceed to Dr. Goff's discussion, whose fiery criticism was gratefully received, and I am going to return it with the same fire and tell him that he didn't come within a mile of the mark, because he was talking about something that I never mentioned.

Dr. Goff was discussing surgery and treatment of goiter, and I never once said that iodine would cure goiter. In fact, I don't believe it will. I have never been able to cure an adenomatous goiter with iodine. We are in perfect accord on our treatment.

And I did not say that the incidence of goiter in adults had been reduced at all. I was talking about adolescent children. Furthermore, those are not my figures. I examined less than a third of them. Dr. Marshall, of Muskegon, who is a goiter surgeon, did 8,000 of them. The men in Grand Rapids, with the assistance of a goiter surgeon and an excellent goiter student, conducted 15,000 of the examinations. I tried my best to emphasize the point that this was not a one-man conclusion. That is the reason I spent so much time telling you what the medical societies of those counties thought after we conducted these studies.

Not only I, myself, but those counties, insist that they have never seen a case yet where iodized salt had any effect on the etiology of goiter. I purposely asked if any one had seen figures on that.

Dr. Goff didn't tell us—and I am sure we would all wait long enough for him to tell us—the number of cases he has seen where he can definitely say that iodine induced hyperthyroidism. If he can give us definite information that he has seen such cases, he will be the first man in the world who has been able to state that definitely, and that would be quite a mark.

Dr. Paden asked what the method of administration was. I think the majority of the work now, in Michigan at least, is by the use of iodized salt Where they used one iodostarin tablet they found that the simplest method was to leave the teachers out of it. The teacher in each room appointed a girl or boy who was interested and responsible, and each Monday morning they would go down to the nurse's office and get as many iodine tablets as they had pupils to take them, and they would pass them out. It has been kept entirely a school problem, under the nurse and the physician. I think if they were permitted to swallow it with water, that would help a great deal. We had that point in mind when they put it in the chocolate. I don't believe any child would hold that chocolate in his or her mouth and then spit it out, because it is excellent chocolate.

I thought I made it clear that we asked every adult whether they had been using iodine. We found that a great many of them had been using salt. I mentioned iodized salt, and our friend, William Voko, of Battle Creek, Michigan, has done a lot of advertising of that, and we saw quite a few cases of goiter—some that had exophthalmic goiter, but

you couldn't say they were due to his treatment, because for every case of exophthalmic goiter that had been using iodine we would find a dozen jus like it that hadn't been using iodine. So we had all of those things to consider. Sorbau, Rooken, and Rocks, and that iodized oil that I mentioned, are some of the patent medicines that have been used.

Dr. Shultz asked if I knew the opinion of Dr. Crotti and Dr. Crile. Yes, I know them very well. But that is far beside the point. Dr. Crotti says that iodine has nothing to do with goiter. He says that very definitely, and just this last week, over at Detroit, at the Post-Graduate Clinic, he made reference to a series of tests which had been conducted on a certain number of animals. They had put bichloride in the water of a certain number of animals, and they did not develop goiter. They put some silver salt in the water of another group and they did not develop goiter. They put iodine in the water of another group, and they did not develop goiter. "So," he said, "there you see that iodine has no more effect than bichloride and silver."

You should have seen the astonishment when somebody asked the doctor, "How about the controls? Did they have goiter?"

Do you get the point? He had forgotten to carry any controls. He answered, "I guess not."

I should just like to know some method whereby you could produce goiter in a group of dogs that you took out for a couple of weeks. We have been working on that for a long time. If the controls didn't develop goiter, I should say that that was a very, very poor conclusion.

I think Dr. Goff will appreciate this statement: Dr. Allen Graham, in whom you have the greatest confidence, of Lakeside Hospital, has studied this question. He has gone over this paper and gone over the studies with me. He intended to go to the upper peninsula with us and study it right straight through, but was prevented from doing so by a slight accident. In all of his work at Lakeside, where all of that work was carried on, he says they have never had a single case in which they could say that iodine had had any effect either way; I mean, in the etiology, whether it caused it or whether it did not. Yet they have seen cases of exophthalmic goiter come in there in which iodized salt had been used, and the next day they would see twice as many come in that had not used iodized salt.

Since the question has been brought up as to Dr. Crile's statistics, every one of you probably has read the article in the *Journal of the American Medical Association* of May 1, 1926, in which they described 16 cases, and it says in that article that every case of hyperthyroidism in men during the preceding six months had been induced by iodized salt. I should just like to know how many of you have read that article? A lot of you have. He described 16 cases.

Instead of reporting the whole thing—there were 196 cases of men that had hyperthyroidism during that same period—he reported the 16 that had used iodized salt. He raised the dickens about those 16 and never said a word about the 178 that hadn't used it. How many of you think that is fair? Can you see through that?

I appreciate the pathological studies made by Dr. Horton. That is very good. I was asked for an opinion on the coming generations. I omitted a paragraph from my paper that is most important and that would have answered that question. I am glad you brought it up.

In the upper peninsula, all the men who have been doing the obstetrics and the pediatrics there for years had that thing in mind when they started the use of iodized salt in May, 1924. Dr. William Anthy gave me this statement: that he and his confrères look forward with considerable eagerness to see if that will have any effect. I forgot to say that previous to this time it was not at all uncommon to see a large goiter at birth. Since 1924, they have not seen a single case of goiter at birth where the mother had used iodized salt. Yet they have seen several cases in sections (among Finns, and so forth) where they had not used iodized salt.

We have all heard nasty suggestions about statistics. I can tell you this with perfect openness and frankness: that study was begun without any theories. We were looking for the truth in the situation. Those figures represent individuals with goiters, and the county medical society was right around us. This is not a one-man group of figures at all.

I also forgot to state that we left the history of every case in the county for the benefit of the physicians who might afterwards see that case, and our interpretation of it. We also sent a copy of each history to the state laboratory, with the statistics, to figure out. If they weren't pretty clear, we certainly would be getting into difficulty. The facts represented in those figures are the combined judgment of the medical societies in those counties together with the one representing the state medical society, and each one of those figures represents a patient with goiter. They are just as nearly true as I know how to make them.

You might be interested in this little outline: A complete, detailed study was made of every patient in an institution in the upper peninsula, where they send the "long-termers." They have something like 7,000 there on rather long vacations. Without their knowing it, in one day we changed over and instead of using salt that had no iodine in it, just the free salt, they started using iodized salt. We did the same thing in the women's institution. So that in a few years we will have definite data on from 7,000 to 10,000 individuals. We will know just what has taken place; and if any one knows a better way to get at the truth than these figures, we will be delighted to have him tell us what it is.

REFERENCES

1. McClendon, J. F., and Hathaway, J. G.: Inverse relation between iodin in food and drink and goiter, simple and endemic. *J. A. M. A.*, 82, 161-24: 1668-72, 1924.
2. Young, C. C.: *A. J. P. H.*, p. 14, vol. 9, 1924.
3. Von Fellenberg, T.: Untersuchungen uber das Vorkommen von Jod in der Natur. Mitt a. d. Geb. d. Lebensmitteluntersuchung u. Hyg., 14, 161: 24, 1923.
4. Chatin, A.: Recherche de l'iodide dans l'air les eaux, le sol et les produits alimentaires des Alpes de la France, *Gaz. d. Hop.*, Paris, xxv: 14, 38, 50, 86, 94, 1852: also *Comp. rend. Acad. d. sc.*, 1850.
5. Marine and Kimball: The prevention of simple goiter in man. *J. Lab. and Clin. Med.*, iii: 40-46. 1917. Prevention of simple goiter in man. *Arch. Int. Med.*, xxv: 661-672, 1920. Kimball: The prevention of simple goiter in man. *Am. J. Med. Sc.*, 5, clxiii, p. 634, May, 1922.
6. Klinger, R.: Die Prophylaxe des endemischen Kropf. *Schweiz. med. Wchnschr.*, li: 12, 1921.
7. Reed, Torrance, and Clay, H. T.: A survey of thyroid enlargement among the school children of Grand Rapids. *Public Health*, Mich. Dept. of Health, 11: 287, Aug., 1923.
8. Olin, R. M.: Iodin deficiency and prevalence of simple goiter in Michigan. Mich. Health Rep., No. 21, May 10, 1924: *J. A. M. A.*, lxxxii.
9. Personal communication.
10. Coindet: (1) 1820: (2) 1821. Nouvelles recherches sur les effets de l'iodide et sur les precautions de suivre dans le traitement du goitre par ce nouveau remede. *Ann. de chim. et phys.*, xvi: 262-268. Decouverte d'un nouveau remede contre le goitre. *Ann. de chim. et ohys.*, xv: 49-59, 1820.
11. Gairdner: Magendie's Formulary, 1824.
12. Rilliet: Quelques mots sur l'intoxication produite par l'iodide administre en petites doses longtemps continues. *Bull. de l'Acad. Imperial de Med.*, xxiv: 23-27, 1858-59.
13. Boinet: De l'alimentation iodee. *Bull. de l'Acad. Imperial de Med.*, October 26, 1858.
14. Breuer, F.: Beitrag zur ætioogie der Basedow' schen Krankheit und des Thyroidismus. *Wein. Klin. Wchnschr.*, 13: 641, 671, 1900.
15. Kocher: *Arch. f. Klin. Chir.*, 1910. xcii, 1166.
16. Marine, David, and Lenhart, C. H.: *Archives of Internal Med.*, September, 1911, vol. 8, pp. 265-316.
17. Plummer, H. S., and Boothley, W. M.: *J. Iowa S. Med. Soc.*, 14:66, February, 1924.
18. Graham: Exophthalmic goiter and toxic adenoma (clinical variations of a single disease). *Jour. A. M. A.*, August 28, 1926, vol. 87, pp. 628-631.

RHEUMATIC FEVER *

By WILLIAM B. PORTER, M.D.

Department of Medicine, Hospital Division, The Medical College of Virginia

Richmond, Virginia

The manifold clinical signs of rheumatic fever have been the cause of much confusion in our conception of the essential nature of the disease. In this discussion rheumatic fever will be considered as a definite clinical entity sharply differentiated from the various types of mono- and polyarticular disease in which joint pathology is the only or principal evidence of diease. It may be defined as an acute general infection, dependent upon an unknown infective agent and characterized by arthritis, myocarditis, and a marked tendency toward inflammation of the endocardium of the valves of the heart.

The disease known today as rheumatic fever was generally regarded until recent years as having arthritis as its principal manifestation; indeed, the term "acute articular rheumatism" is sufficiently descriptive to indicate that, historically at least, attention was focused primarily on organs of locomotion. However, the joint manifestations represent the most fleeting evidences of active disease, and many patients believe themselves well when these painful and swollen joints have subsided. On the other hand, the important lesions located in the cardiovascular and nervous systems are frequently unassociated with subjective phenomena; consequently, their elusive manifestations are overlooked or disregarded both by patient and physician.

It is in these systems that one finds the hallmarks of rheumatic fever persisting for months and even years as active, progressive disease, resulting finally in damage so extensive as to result in death.

A brief résumé of the pathology of rheumatic fever will aid greatly in understanding the clinical course of this disease and in solving the enigma of why a patient reëntering his usual activities after four to six weeks' illness of polyarthritis with only an uncertain endocardial lesion returns in twelve or more months with an extensive pancarditis, while during this interim he has not had sufficiently severe illness to lose a day from his work? Swift has shown that the lesions of rheumaic fever are of two fundamental types, *i.e.*, exudative and proliferative. Exudation is responsible for most of the painful evidences of the disease, especially the polyarthritis and neuritis. This evidence of the affection is undoubtedly specifically influenced by properly administered salicylate therapy, consequently the most striking phenomena of active pathology disappear promptly. On the other hand, the proliferative lesions represent a fixed granulomatous reaction to the etiological virus and are responsible for the chronicity and progressive nature of the pathology located in the cardiovascular apparatus. The unit of this pathology is the submiliary nodule, or Aschoff body. The widespread distribution of the proliferative lesions, especially in the cardiovascular apparatus, has been emphasized by numerous observers, notably Von Glahn, Pappenhimer, Swift, Coombs, and Sachs.

* Read before the West Virginia State Medical Association at Fairmont on May 23, 1928.

Von Glahn and Pappenhimer have described specific rheumatic lesions and mesentery, and rheumatic aortitis, with associated dilatation, is also described by the same observers. Auricular as well as ventricular myocarditis is so definite a part of the pathology of rheumatic fever that diagnosis of one carries with it admission of the existence of the other. Von Glahn has observed active myocardial pathology in a patient dying twenty-five years after any clinical signs of arthritis had existed, and I have specimens showing vegetations on the mitral valves, evidencing fresh endocarditis found in a patient dying of congestive heart failure eighteen years after any "clinical" evidence of rheumatic fever had existed. The proliferative lesions located in the cardiovascular systems tend markedly to be progressive in nature and potentially active. There is much pathological evidence to support the belief that the tissue reactions in rheumatic fever behave in a manner similar to the lesions of tuberculosis. The tendency of both is toward quiescence, with renewed activity under provocative biological circumstances, and both retain foci capable of suddenly liberating a violent and fatal infection, or by a series of less violent reactions wearing down the local and general resistance of the host and terminating finally in death. In the past, one has learned to think of the course of rheumatic fever infections as consisting of a series of active phases separated by long intervals of quiescence; and one has also supposed that during these intervals the organisms remain latent somewhere in the body in some hidden place, from which they sally forth whenever circumstances allow to inflict a raid on the heart, nervous system, or joints. Yet, in viewing the problem from a clinical standpoint, the more assiduously I study rheumatic heart disease in late as well as early stages and over long periods, the more impressed am I by the evidence of continuity and persistence of the initial infection. McMillian and Stroud, in a recent report on the convalescent care of two hundred and twenty-five (225) children over a period of five years, state that there is at present no single finding upon which one may base one's conclusion that the proliferative lesions of rheumatic infections have either become latent or have been overcome by the child's powers of resistance against the infective organisms, and that in spite of the marked gain in weight and apparent clinical wellbeing, cardiac damage may be active as evidenced by low-grade fever and leukocytosis. This was applicable to 54% for more than three years and 8% for the entire period of five years.

Clinically, rheumatic fever is divisible into three more or less distinctive types. The first type has an acutely severe course with very striking polyarthritis and minimal cardiac signs and symptoms. This represents the picture one sees as a rule, in the initial attack. Exudative pathology predominates and symptomatic relief is prompt. The second group, which is the largest, may represent a second attack following in the wake of the first, or it may be the initial manifestation of the disease. In this the joint symptoms are not striking, but are more resistant to treatment and cardiac signs and symptoms, or involvement of the nervous system, occupy a prominent place in the clinical picture. Exudative pathology is slight, while proliferative lesions predominate, hence the resistance to symptomatic relief and the tendency toward a subacute course. The third group represents the type commonly seen by the neurologist or cardiologist. Evidences of active pathology are slight and are readily overlooked. Polyarthritis is absent, as a rule, but a carefully elicited history will most likely give a picture of remote joint or muscular disease. Proliferative pathology is the hallmark of this stage and is responsible for its subacute course and progressive nature.

Clinically, these subgroups of rheumatic fever are quite similar in many details to pulmonary tuberculosis; the first type corresponding to the acute exudative pleuritis with effusions, the second to the lesser grades of exudative pleuritis, but with the proliferative lesions of tubercle formation invading the lung parenchyma; and the third to the subacute and chronic, yet progressive, proliferating and degenerating pathology of fibrosing and caseating pulmonary tuberculosis. I have, in my records, patients who have had the acute exudative type of rheumatic fever ten and fifteen years ago, complicated by large pericardial effusions, who were treated fundamentally as one would treat acute exudative tuberculous pleuritis and who are today practically normal men and women. While on the other hand I have records of patients who were seen in the wards with insignificant muscle and joint phenomena and incipient cardiac disease, who have left the wards to return in ten to eighteen months with advanced pancarditis without having had any acute infection during the interval necessitating a single day in bed. The latter type is characteristically similar to the carelessly treated incipient lesions of tuberculosis.

The foregoing facts are of fundamental importance when one considers the question of treatment which one must approach in the realization that the disease is a general infection with a special predilection for the major pathology to affect the cardiovascular apparatus, and in the knowledge that, regardless of negative physical evidence, the diagnosis of rheumatic fever carries with it the diagnosis of cardiac and vascular pathology. The one does not exist without the other any less certainly than typhoid fever exists without disease of the Peyer's patches in the intestinal tract. The very nature of the disease suggests the importance of a specific remedy, serum or chemical agent as the ideal in the treatment of this affection. No sera has yet been perfected which is sufficiently acceptable for general use. The work of Small is encouraging; however, there still exists much doubt as to the specificity of the organism described by this observer. There is much and increasing evidence to support the belief that rheumatic fever is caused by many strains of streptococci biologically quite different. Swift has suggested that the nature of the disease may be explained by assuming that the individual in whom rheumatic fever occurs becomes allergic to streptococci, and as long as this constitutional state exists he is liable to the disease and will have recurrence just so often as the proper biological state of the individual is satisfactory for the infecting organism to produce sufficient amounts of antigen. If this be true, it explains why so many different types of streptococci have been found in the disease. It also makes more difficult the production of sera which is truly specific. Sodium salicylate is a time-honored remedy in the treatment of rheumatic fever and it is the nearest approach to a specific chemical agent now obtainable. My opinion is that much of the argument against the usefulness of this drug is unjustifiable and based upon an inadequate knowledge of the disease. One must be impressed by the striking relief from pain and the prompt disappearance of acute polyarthritis when salicylate of soda is administered in sufficient amounts. On the other hand, it is equally impressive to note the development of a pancarditis in the face of this apparent clinical improvement.

This paradoxical situation may be explained by assuming that the exudative lesions are modified by salicylates; while the proliferative lesions are in no wise favorably influenced. The exudative lesions are most important from the patient's standpoint on account of the subjective symptoms; the seriousness of the disease lies in the proliferative processes which are probably not influenced by drug therapy, are progressive in nature, and produce few and elusive clinical symptoms.

For many years I have felt that, once a patient is infected with that organism responsible for rheumatic fever, he is always infected, and that the disease is not cured in a true sense any more than tuberculosis is cured. It may be "arrested," but the liability of an acute flare-up is always a potential possibility. The relationship of these recurrences to tonsillar disease is a mooted question. Tonsillar tissue undoubtedly is one of the points of entrance of the infecting virus, but it is by no means the only infection atrium. Statistics on the subject, which are very large, tend to show that tonsillectomy is much more effective in preventing the initial attack than in influencing the future course of the patient. However, it is sane to remove any definite foci of infection whenever found, regardless of contrary statistical backing, for statistics can prove many points but rarely tell the whole truth. It is interesting to note in passing that, regardless of the vast actviities of recent years directed at focal infection, the number of cases of rheumatic fever has not been materially lessened.

The principle underlying the treatment of tuberculosis is that the body has within itself the power to arrest invasion if circumstances favorable to the process of immunization can be secured. The same is true of rheumatic infection. As the years go by the evidence of activity tend to crop up at longer intervals and finally disappear altogether. However, this is possible only if the patient does not develop virulent general proliferative lesions and sufficient opportunity is afforded for the development of natural immunity.

The great majority of rheumatic fever patients die a cardiac death. This fact is paramount in the consideration of the care of such patients.

In the event of the least evidence of activity, bodily rest, ample nutrition, and an abundance of actinic rays all are of paramount importance. We have no more potent agencies in combating infection than supernutrition, sunshine, and rest. Reducing the circulatory apparatus to a basal state is the most direct method of promoting local immunity, limiting the progress of active pathology and thereby lessening secondary replacement fibrosis. The length of time necessary to produce an "arrested" state of the proliferative lesions of rheumatic fever is a very variable one. Each patient is

a law unto himself, but there is one point I would particularly stress, *i.e.*, that such patients must not be dismissed as quiescent with their symptoms masked by salicylates, but must be observed over prolonged periods, preferably under intelligent supervision in sanatoria in a manner similar to the present management of pulmonary tuberculosis.

The pathogenesis of a disease is poorly understood and its elusive manifestations overlooked whenever the occurrence of that entity does not appear in impressive numbers. Rheumatic fever is not, in the southeastern states, a pandemic infection, as it is in the British Isles and the New England states, yet it is of sufficiently frequent occurrence to be a problem deserving of serious consideration. My impression is that polyarthritis is a much less striking aspect of the clinical picture of rheumatic fever in the southeastern states. It is not at all unusual to find patients with advanced mitral stenosis who give no history of any joint disease. This fact, together with the relative infrequency of the disease, explains much of the apparent lack of interest in the care of patients suffering from rheumatic heart disease. Undoubtedly, the rheumatic fever patient in the southern states suffers as a result of this situation. Up to date no consideration has been given to the sanatorium or rest-home care of this type of patient, yet, if one is to do constructive work in the prevention of cardiac disease due to rheumatic fever, this aspect of therapy warrants serious consideration. For it is undoubtedly true that only in surroundings such as can be obtained in institutions can the necessary observation of the disease be made and the proper supervision and care followed over a sufficiently protracted period.

Summarizing this review of rheumatic fever, one is justified in drawing the following conclusions:

1. Rheumatic fever is a general infection with widespread pathological lesions, the most important involving the cardiovascular system.

2. The arthritic symptoms are unreliable indices to the progress of the disease, for the cardiovascular pathology may remain active for months and even years after all joint phenomena of rheumatic fever have subsided.

3. Regardless of the absence of physical signs of disease, myocarditis and endocarditis always exist in patients affected by rheumatic fever.

4. The exudative lesions are responsible for most of the joint phenomena and respond favorably to salicylate therapy, yet the proliferative lesions are little influenced by drug medication. These facts must be given adequate consideration in evaluating the clinical course of the disease.

5. The nature of the lesions and the clinical behavior of rheumatic fever are so similar to tuberculosis that a safe attitude is to view the diseases as having many attributes in common. Neither is ever cured in the true pathological sense, yet either may be arrested under favorable biological conditions.

6. Prolonged institutional care is sane. The necessity for this is apparent when one considers the elusive nature of the evidences of activity and the necessity for careful supervision if activity is present.

Discussion

DR. O. B. BIERN (Huntington): I don't believe I have ever heard a paper on any subject before any society that was more clearly presented and more full of thought than Dr. Porter's paper on rheumatic fever. A few years ago there was a common saying that if you knew syphilis you knew medicine, and I believe that rheumatism, or rheumatic fever, could well be added to that old saying.

I like the fact that Dr. Porter changed somewhat the definition of rheumatic fever, in that he said it is a disease of unknown etiology. He further proved that by omitting from that definition the association of chorea with rheumatic fever. I don't know, but I believe he omitted that because we don't have any definite pathology for chorea; therefore, we don't think we have a definite etiological agent.

I have to agree with everything Dr. Porter has said. There is only one thing I can emphasize, and that is the relation, or the correlation—that isn't the word, either—the attitude toward rheumatic fever and euberculosis both in treatment and in the diagnosis; that is, the exacerbations which both diseases undergo.

I like, too, the doctor's reference to tonsillitis. He said that that wasn't the all-important etiological factor in the cause of rheumatic fever; neither was it the one portal of entry. Recently we have had many articles calling attention to the urethra, to the cervix, to the gallbladder, the appendix, and many other parts of the body which might act as portals of entry for this unknown etiological agent.

I just wonder if this organism might not be likened to the classification they had for syphilis some time ago, when they said that in the many lesions produced there might be different strains, the dermatrophic producing the skin changes, the viscerotrophic producing the visceral changes, and the neurotrophic producing the neurological changes.

We have a skin lesion of rheumatic fever. We have, supposedly, chorea. We have the joints and we have the vascular system affected.

I like not to take the pessimistic attitude that Dr. Porter takes with regard to rheumatic fever, and while the amount of work that is being done is small, I should like to grasp at that as a drowning man, feeling that this might offer some hope of cure in the future.

DR. W. B. STEVEN: (Eckman): I have enjoyed Dr. Porter's paper very much, and I want to congratulate him for bringing us this important message.

My emphasis is from the same point of view as Dr. Porter's, except that mine is from the point of view of the general practitioner. My conclusions have all been reached in that way, and, of course, by working with the college and with the hospital, and my conclusions have been arrived at in a different environment altogether from Dr. Porter's.

I have realized for a long time and have stated that, in my opinion, rheumatic fever was a separate clinical entity. I have also realized that when the patient was symptom-free he was not cured, and that, as certainly as dawn follows darkness, the rheumatic patient would return for treatment, at least some time in the future after being discharged as being well, and that the next time he showed up he would show up with a rheumatic heart.

This is what brought that to my attention first: I make a great many physical examinations, and in all these cases, when I run across a crippled heart (as I often do) of any type, naturally I try to get a history of the patient, and these patients usually recall that at some time in their lives, usually when very young, they had been in bed at least for a few days with rheumatism.

Another point I want to mention is that analogy to tuberculosis. I hadn't thought of that before. On the rest of the things mentioned by Dr. Porter my conclusions are about the same as his. That is an entirely new thought, so far as I am concerned, but I think it is plausible, because my practice is in southern West Virginia, where a large number of the men work underground and they are not exposed to sunlight; they don't get a great deal of fresh air, and we do have a lot of rheumatism there, and they never get well.

I noticed in the discussions here today, particularly this afternoon, with regard to tuberculosis and cancer, that a remedy has been mentioned and a remedy has been discussed, while we still have no remedy for rheumatic fever that I know of.

I want to thank Dr. Porter. I feel very much indebted to him for bringing this message to us, and coming down here to read this paper. I regret that it was put off until a time of day when a good deal of interest probably has been lost because the crowds are scattered. We ought really to have had every one here to hear this paper.

DR. B. S. RANKIN (Tunnelton): This paper hits a real tender spot. I have a little girl, nine years old, who, about six weeks ago, broke down with tonsillitis and immediately following she had a severe endocarditis and, I presume, a myocarditis.

This is the question I should like to ask Dr. Porter: We will take for granted focal infection with the tonsils. If that is the case, how soon would you advise removal of that focus of infection? I shall go home and push the salicylate a little more than I have. Of course, I presume she should have complete rest, and I have been giving a little digitalis. I should like to ask if that is indicated.

DR. B. F. BROWN (Huntington): I should like to ask if Dr. Porter, or any other gentleman here, has had experience in vaccine treatment. My wife has suffered from rheumatism as a result of vaccine treatment.

DR. PORTER (*closing the discussion*): The constitutional factors in rheumatic fever are undoubtedly of considerable importance. Dr. Draper, of New York, has recently noted rather striking characteristics in those people who have rheumatic infections, and he believes that there are differences in the physical nature of those who have chorea, arthritis, and pancarditis. He is convinced that there are certain constitutional factors appearing in that group of individuals who develop the so-called rheumatic fever triad. I would recommend his book to any of you who are interested in this subject.

I am indebted to Dr. Stevens, for he started me in the practice of medicine. Dr. Stevens mentioned the cases occurring among coal miners. This is interesting, for rheumatic fever is particularly prevalent in those countries where sunshine is scarce. In the clinics of Edinburgh, England, one is impressed by the great frequency of rheumatic fever, and in certain of the poor sections it occurs almost in epidemic form. In those sections where hygienic conditions are poor, food is insufficient and the sunshine is infrequent.

In answer to Dr. Rankin's question, my feeling is that tonsillectomy is indicated in his case, for the

disease apparently followed in the wake of acute follicular tonsillitis.

I have in the hospital now a boy who has a severe rheumatic fever. The initial attack occurred ten years ago. From the age of six to the age of sixteen he was entirely free from this disease. In the interim he has had a tonsillectomy done. At this time he has an extensive pancarditis, as evidenced by marked disturbance of conduction of the main His bundle and a right bundle branch block. No area of focal disease has been demonstrated. The throat is particularly free from any evidence of infection. It is conceivable that the original attack of rheumatic fever might have been prevented had the tonsillectomy been done prior to this illness, but manifestly it has not prevented the recurrence of the disease.

Again I wish to emphasize the fact that once the primary focus has produced secondary foci the removal of this focus probably has little effect upon the recurrence of the disease. This case beautifully illustrates the point made in the original discussion, namely, that the disease may be quiescent, but at all times there is the liability of recurrence when the proper conditions exist, lowering the patient's general resistance.

I have had no experience with either sera or vaccine in rheumatic fever. The work reported from the clinic of Dr. Small in Philadelphia does not impress one as being the final answer in the treatment of this disease. In our clinic we do not use serum.

BENIGN PROSTATIC HYPERTROPHY *

By R. D. GILL, M.D.
Wheeling, W. Va.

During the past decade there has probably been more written concerning benign prostatic hypertrophy than any other single urological subject. So true is this that many recent urological essayists have prefixed their papers upon such a time-worn subject with apologies. However, as long as there are so many men past fifty years carrying residual urine in varying amounts, gradually destroying their kidneys and rendering irreparable damage to their circulatory systems, I feel that enough has not been said, whether this subject be time-worn or not. There is no more excuse today to allow this than there is to allow a cancer of the breast to ulcerate or an appendix to rupture before advising surgical intervention. Furthermore, there are many men without actual residual urine who have a marked dysuria and nocturia which is in turn having its effect upon their hearts, who are receiving methylene blue or some other inefficacious remedy instead of a well-outlined and supervised system of non-surgical or minor surgical measures, which might, if properly applied, carry them through the remainder of their lives without radical surgical intervention. These patients form a class which, although it is not as great as it has been in the past, is still entirely too large, and who go on without adequate or early attention and are finally referred in uremia and die, or are so totally disabled that little more than palliative measures can be attempted.

Since the introduction of conservative prostatic surgery by Geraghty, Young, Cabot, and others, the operative mortality of the benign prostate in the hands of the well-trained urologist or surgeon urologically trained has been reduced to almost a minimum. Whereas, anywhere from thirty to eighty per cent of these patients formerly died, now the mortality varies from two to five per cent; approximately the same as for acute appendicitis. This, in itself, is a monument to modern urology. These figures, while true, are misleading, for they represent only operative mortality. The majority of writers do not report the number of patients that die in the preoperative preparatory period, and these, in my opinion, contribute a very large class. Add to these all those who are allowed to die without any attempt at rational modern surgical treatment and those patients who die of intercurrent disorders indirectly attributable to vesical neck obstruction, and it is readily seen that there is still much too large a group of men past fifty whose deaths are due directly or indirectly to benign prostatic hypertrophy.

It is our duty, then, to get before the physicians who see these patients early in their course, the facts of modern urological treatment and its results, for surely no one who knows these facts and graces the term *doctor* would allow his patient to gradually be destroyed when earlier intervention would insure a much longer and happier expectancy.

Etiology.—When one considers that thirty per cent or approximately one-third of our male population who pass fifty years of age show evidence of hypertrophy of the prostate, one can not help but wonder why this should be true. Pathologically, prostatic enlargements are described as adenomas or adeno-fibromas; in other words, this enlarge-

---

* Read before the Surgical Section of the West Virginia State Medical Association at Fairmont on May 22, 1928.
From the Division of Urology, Wheeling Clinic, Wheeling, W. Va.

ment is a new growth or tumor. Is it not quite unusual for any given tumor to attack any one organ with any such regularity? Reflection upon these facts and the finding, in many prostatic specimens removed, of evidence of chronic inflammatory disease, has led Caulk, of St. Louis, and others to consider chronic prostatitis as having considerable etiological significance in enlargement or hypertrophy of middle age. If infection in the prostate is definitely proven to be an important factor in prostatic enlargement of middle age, we should instigate a campaign to rid all prostates of infection, not only to remove them as sources of infection for other more distant disorders, but also as a preventative for bladder neck obstruction in later years.

Indications for Operation.—One is frequently asked the indications for surgical intervention in prostatic hypertrophy. Hunt, of The Mayo Clinic, says that a constant residual urine of 60 c.c. or more, or a marked frequency of both, constitutes a surgical condition. Certainly, to wait for a residual urine of a pint or for complete retention is unwarranted and unscientific. With bladder neck obstruction there is a marked increase in intravesical pressure and subsequent dilatation of the ureters and kidney pelves. This frequently occurs long before there is much residual urine.

At this point I would like to speak briefly of a class of patients that have only a moderate enlargement of the lateral lobes intraurethrally. Many of these patients have a marked frequency, considerable difficulty in starting the stream, a small stream, dribbling, but no residual urine. Cysto-urethroscopic examination shows an encroachment on the urethra of the lateral lobes of the prostate from the veramontanum up to the internal meatus. In many cases these lobes may be seen to actually impinge on each other, completely obliterating the urethra. It is interesting to note, in connection with these cases, that in some, when the enlargement is not marked, gradual dilatation of the prostatic urethra with large sounds and massage on sound and prostatic diathermy relieve them markedly. I have several such cases under observation whose nocturia has been reduced from six to ten times at night to once or twice, and some with less nocturia who now do not get up at all. None of these patients have developed residual urine during a year or more of observation. These are relatively mild cases of bladder-neck obstruction and, of course, should be kept under observation; if residual urine develops, more radical surgical measures should be advised.

To my mind, surgical intervention is indicated whenever there is a constant residual urine, even though it be small, or even without residual urine if the patient's rest is being markedly disturbed at night and his cardio-renal reserve destroyed. Many conditions that in the past have prohibited major surgical procedures, such as hypertensive heart disease, diabetes, etc., do not do so today, due to the introduction of regional anesthesia. Many more very poor risks are rendered comfortable and happy the remainder of their lives by minor surgical procedures, chiefly the punch operation, to which in recent years Dr. Caulk has contributed so much.

Factors Influencing Mortality and Morbidity.—I do not intend to go into every detail that influences mortality, but suffice it to say that the operative mortality, barring surgical accidents that accompany all major surgical procedures, is distinctly proportional to the care and detail of preoperative treatment, careful diagnostic study made of the patient's glandular enlargement, the application of the proper surgical procedure to the individual case, and the operator's own surgical ability.

I would like to mention briefly what I consider a few high points in the preoperative management: First, bladder drainage. Before prostatectomy every bladder should be drained at least one week or ten days before operation, and in many cases much longer, whether there be a large residual urine or not. There are two ways to drain a bladder, one by indwelling urethral catheter, the other by suprapubic cystostomy. The former method appeals to me as the most natural and most logical and can be carried out in approximately seventy-five to eighty per cent of benign prostatic cases. There are those, I know, who think this is not true, but it is my contention that they have something to learn about the use of an indwelling soft rubber catheter. There are a few patients who will not tolerate a urethral catheter, and others who have an ulcerated middle lobe that keeps bleeding, the blood clots stopping the catheter so that proper bladder drainage is not maintained. Another very small group of cases have such marked prostatic hypertrophy that they can not be catheterized. In all of these, suprapubic drainage has to be done, and also in patients having progressive pyelonephritis.

Further regarding bladder drainage, I feel that every case with a residual urine as much as 100 c.c. should be decompressed. I mean by this that the bladder should be emptied slowly against pressure. Even with very small residuals, in my experience

they do better if this method is employed. I prefer the apparatus described by Van Zwalenburg. It is the easiest and simplest method I know of. At this point I would like to say a few words about catheterization of patients when first seen with acute retention, for the particular purpose of condemning one instrument, the steel or metal catheter. I feel that this is one of the most dangerous instruments made today, and its use in prostatic cases should be greatly restricted. Time and again I see these old men, horribly shocked, blood trickling from the urethra, the meatus swollen and edematous, after several hours of work with a metal catheter, and very frequently, after all this trauma, a soft rubber catheter passes readily into the bladder, even without the wire stylet. This also could have been done before all this punishment and injury had been meted out.

Second, I would like to call attention to some details in the preparatory treatment which are frequently overlooked. In the first place, these cases require many times more attention, work, and consideration than any other surgical case, on the part of everybody concerned—doctor, nurse, and all other attendants. The majority of patients are in the sixth or seventh decades of life and may show signs of cerebral arteriosclerosis, characterized chiefly by restlessness, irritability, and other habits that constitute the so-called peculiarities of elderly people. Many times they are quite stubborn, provoking, and try our patience to the utmost. Considerable effort should be made at all times to please and humor them and keep them satisfied and happy. They are much more susceptible to all kinds of complications and intercurrent diseases than are the average surgical patients, because many of them represent very fragile pieces of human mechanism with a much lowered resistance; therefore, an extra effort must be put forth to prevent such occurrences. Very small factors may mean the difference between success and failure in handling these old men. It is this attention to the most minute details in preparing a prostate for operation that has been so all-important in the great reduction in operative mortality. Bugbee has said that the actual removal of the prostate gland is but an incident in the treatment of a case of hypertrophy of the prostate.

For many years mortality was the chief concern in these cases. At the present time, morbidity concerns us equally as much. We are not only interested in saving the patient's life, but it is our aim to restore him to as near normal as possible. Factors that influence morbidity are, I think, chiefly two: the technical success of the operation itself and the postoperative care.

Some men prefer to do the two-stage suprapubic operation, whether the bladder be readily drained by urethral catheter or not. Personally, I prefer the one-stage operation whenever possible, for the following reasons: It is technically easier and can be done under direct vision after the method of Hunt, if so desired; there is less chance for incomplete removal of parts of the gland and mucous membrane tags, which cause an irregular vesical neck and are a potential source of subsequent obstruction. The classical two-stage operation has been of wonderful service in the development of prostatic surgery, but it has also done harm in that many men who are not sufficiently trained think that the one and only step to success in removing a prostate is to do it in two stages.

Lower, of Cleveland, has perfected the most nearly perfect surgical procedure for suprapubic prostatectomy. He not only does the operation in one stage under direct vision, but sutures the prostatic capsule to control bleeding and closes the bladder tight without drainage. This is not generally accepted by most urologists as yet. But certainly the technique generally used now is far superior to the old, bloody, "potato-digging" type of operation, and the more modern procedures are having their decided effect on morbidity.

An important factor which is frequently lost sight of is the postoperative treatment. These patients should not be operated upon, sent home, and lost sight of. They should be kept under observation and the bladder irrigated until clean. Care should be taken not to allow the bladder neck to contract down, narrowing the lumen. To illustrate the importance of this care, I would like to contrast two cases: Two patients of essentially the same age, equally good operative risks and with practically identical glandular enlargements, operated upon the same day with essentially the same technique, had most satisfactory convalescences, and were discharged from the hospital on the sixteenth and eighteenth postoperative days, respectively. The first was from a very rural district, while the second was easily accessible and had the proper follow-up treatment. Nine months after operation their conditions are as follows: The first gets up four to six times at night; stream is small; he has to use considerable effort; occasionally there is dribbling and he has a residual of two to three ounces. The

prostatic urethra will not admit a sixteen French sound. In brief, he is in almost as bad shape as he was before operation. The second, however, does not get up at all at night and has not for six months. The stream is of good size and force, he has perfect control, no residual urine, and the whole urethra admits a twenty-six French sound with ease. I feel that there is absolutely nothing responsible for the first patient's plight except lack of follow-up treatment, and we should impress the importance of this treatment upon our patients and also upon the referring physicians.

Conclusion.—In brief conclusion, then, what can modern urology promise patients who are suffering from benign prostatic hypertrophy? If the case be mild and without residual urine, we can frequently relieve them symptomatically for a long time by well-regulated prostatic treatments. If the case be one of well-marked hypertrophy with residual urine of a relatively short duration and without irreparable damage to the cardio-renal system, we can promise him the removal of the gland with a five per cent or less mortality rate and about ninety per cent chance of an excellent functional result. In the most severe cases, with long-standing residual and advanced pyelonephritis, we can offer relief in many instances for the remainder of their lives with minor surgical procedures, with a correspondingly low mortality rate.

The time-worn phrase, "He has a prostate but he is too old for operation," or "is in too poor shape" or "has some complicating disease," should be consigned to the realm of ancient history.

Men approaching the age of three-score or more, when life begins to take on a new appeal, who are informed of their chances to carry on, rejoice—and justly so; and those who are so unfortunate as to be in ignorance of modern urological methods in dealing with this particular discrepancy of old age should be so informed, that they may not succumb to the same ignoble death as did many of their fathers and grandfathers.

HYPOTHYROIDISM — DIAGNOSIS AND TREATMENT *

By ALBERT H. HOGE, M.D., F.A.C.P.
Bluefield, W. Va.

It is my pleasure to discuss with you, tonight, some of the symptoms and findings encountered in that class of individuals, mostly females, who suffer from many physical and mental disturbances, all because of the lack of sufficient activity of the thyroid gland.

Medical literature of recent years has abounded in articles dealing with the overactive thyroid. So much has been written dealing with the various modes of treatment that one is necessarily left in a state of confusion in treating a true state of hyperthyroidism. It is, therefore, refreshing to deal with a phase of the thyroid gland that comparatively little has been written about, still all are in perfect accord as to the proper treatment. My excuse for bringing this subject to your attention is to remind you of that state known as mild hypothyroidism.

We are all familiar with true myxedema and cretinism; but little effort or skill is required in recognizing either. There is, however, a class of patients who consult us not infrequently, and from year to year, mostly females, who complain of many nervous and mental symptoms until one almost has a mental collapse at sight of them in the reception room on a busy day. I often wonder if Job, in his palmy days, could have had the patience to listen to them without showing fatigue. We classify them under neurotics, neurasthenics, and other meaningless terms; give them some medicine and lots of advice, only to have them return with the same complaint or one still worse. I believe that some of these cases are true hypothyroids. Observation for a number of years has convinced me that mild hypothyroidism is encountered more frequently than is generally supposed, and will remain unrecognized unless special methods, other than clinical signs, are used. I believe, though, that all of these cases show definite and positive symptoms if we look for them.

Personal experience and a close analysis of all data obtainable show the follwoing facts to be present in more than fifty per cent of all these cases: History of obesity, particularly in early life; mental symptoms; marked liability to contract infections; dry or thin hair; nervousness, local and general; dry, harsh skin with pigmentation and atrophy; cold extremities and cold skin generally; obesity, although one is just as likely to see a distinct loss of weight; indefinite pains; constipation; ringing in ears; headaches; no appetite, rarely caring for more than one meal a day (these people seldom eat breakfast); a subnormal temperature; slow pulse; slow respiration and lowered blood-pressure; usually a female. Of all these data, lowered temperature, pulse, respiration and blood-pressure occur most frequently. But few symptoms may be present in many cases, the

* Read before the Cabell County Medical Society, Huntington, December 13, 1928.

diagnosis being impossible without laboratory aid.

The basal metabolic rate is of the greatest value in the diagnosis and treatment of hypothyroidism, but can not be considered an absolute criterion. It would seem, though, that patients presenting the usual symptoms seen in hypothyroidism should have a basal metabolism determination as an aid to diagnosis.

The most frequent presenting symptom in these cases is a sub-efficient bodily condition. The most common complaint of the patients seen by us, which caused them to seek relief, was generally described as weakness, chronic fatigue, lack of ambition, or nervous exhaustion. A majority had headache, *worse at time of menses.* The menses are usually regular and normal except for the headache. Regardless of the symptom for which they seek relief, there is always one characteristic feature in the history of the hypothyroid patient: sub-efficiency of the bodily machine. Somewhere in the story there will be a background of inefficiency, generally physical, and, in cases of long duration, mental as well.

It is apparent that there is an abundance of clinical features in hypothyroidism, which should render the diagnosis relatively easy. The principal difficulty lies in the identification of early and atypical cases, and in these the determination of the basal metabolic rate is of the greatest value. Slightly lowered rate, however, is not sufficient evidence for a diagnosis of primary hypothyroidism, unless supported by definite physical findings. We would consider a diagnosis of hypothyroidism very questionable, even with a reading of as low as minus-twenty, unless there are definite physical findings.

Nephritis is frequently associated with hypothyroidism, especially those moderately far advanced. I have seen two cases referred to the hospital by capable men with a diagnosis of advanced nephritis with marked edema. Both showed a very low metabolic rate. They are both now at work, free of all symptoms, the result of thyroid therapy. It would seem best to keep the thyroid in mind in treating all cases of nephritis.

Treatment.—While the matter of treatment is familiar to all, there are certain points worthy of mention. The establishment of a proper dose of thyroid extract requires careful clinical observation. Frequently, variations in potency and rate of absorption of the drug cause difficulty and lead to unsatisfactory results. The question is frequently asked, "Which preparation of thyroid is best?" This should make very little difference, so long as it comes from a reputable manufacturer. One will usually be better satisfied if the same product is used all the time. All patients should be given, at the beginning of treatment, small doses from one-tenth to one-half grain of thyroid extract, increasing as deemed necessary, thereby avoiding the danger of converting a long-standing hypothyroid suddenly to a marked hyperthyroid, with embarrassing, and at times very disastrous, results. We believe most hypothyroids have been such since early in childhood, and are unprepared for a sudden change in their body metabolism.

Treatment with thyroxin has many advantages: it may be given satisfactorily by mouth or intravenously. Observation of the patient, and determinations of the basal metabolic rate at intervals, are necessary for the best results. Our experience has been confined mostly to thyroid extract. We can find very little mentioned in medical literature regarding the use of iodine in these cases of hypothyroidism. My experience has been that it does not do any good, while some cases are made distinctly worse. I have seen cases that have been converted, by the prolonged use of iodine, from a state of mild myxedema to one of atypical hyperthyroidism, showing marked prostration, nervousness, and distinct mental symptoms, and increased metabolic rate. In none of our cases, though, has the basal metabolic rate been very high; certainly not in comparison with the symptoms. These cases have all improved rapidly upon being put to bed with complete withdrawal of iodine. In each case the basal metabolic rate returned to a minus reading after the withdrawal of the iodine. I wish to report one case that will illustrate this condition:

Miss E. K., age 33, school teacher, was referred April, 1926, for a metabolism test and had all clinical signs of an advanced exophthalmic goiter. Metabolism readings were plus 79 and plus 80; weight, 110 9pounds. Operated upon in May at The Mayo Clinic. She returned home in three weeks, gained in weight and felt much better for two months. During this time she was taking 10 drops of Lugol's three times a day. About the middle of August she began losing in weight, strength and endurance, and had increased nervousness. She was advised by her physician to increase the Lugol's to 20 or 30 drops three times a day. She continued on this dosage until she entered the hospital September 29th, an almost complete nervous and physical wreck. It would be most difficult to describe this woman's mental and nervous state.

Probably the most outstanding feature was a feeling of impending death, and she was afraid for the nurse to leave her alone for even a few moments. The day following admission, September 30th, her basal metabolism showed plus 20 and plus 18, October 2d plus 16, and October 20th minus 11. She was feeling much better and was discharged, taking one-half grain of thyroid extract once a day. The subsequent course has been satisfactory.

This represents not a rare or unusual case, but a condition met with not infrequently, due to the confusion that exists as to the proper use of iodine in goiter.

Plummer and others of wide experience have found that a great many of the patients with large colloid goiters show a basal metabolism rate below normal, varying from mild hypothyroidism to various degrees of myxedema. It should, therefore, be evident that these cases of large, simple colloid goiter should not have iodine, but a partial thyroidectomy to relieve the pressure, to enable the remaining gland to function properly. If evidence of hypothyroid function persists, then thyroid extract, in small doses, should be administered, else the gland may again enlarge to its former size.

I have been very much interested in the relationship that may exist between hypothyroidism and sterility. Litzenberg recently reported the result of a large series of experiments in this line, and I wish to give you his impressions:

1. The relation between the ovary and the thyroid gland is generally known.
2. Myxedema is certainly a cause of sterility.
3. Lesser degrees of hypothyroidism are, by the result of investigation, apparently also a cause (or index of a cause) of sterility.
4. A normal basal metabolic rate is apparently necessary to conception and a normal continuance of pregnancy.
5. Properly supervised thyroid medication will restore the basal metabolic rate to normal, and will, in some cases, result in conception.
6. Women who habitually abort should have their basal metabolic rate taken.

Not until recent years has the technique of making a basal metabolism determination been simple enough to be of clinical value in the average hospital. Formerly, they were so complicated that only a chemist could make them. In recent years, however, many machines both simple and accurate have been brought out for making this test. The advertisements of some manufacturers would make one believe that the average office attendant could successfully operate them. This, to a degree, has led many physicians to lose respect for the value of a metabolism test in goiter cases. This is most unfortunate, because their cases are diagnosed and treated on clinical signs alone. The teaching in most all goiter clinics today is that basal metabolism determinations are of indisputable value, as much so as any other laboratory procedure, as an aid in diagnosis and treatment, when properly interpreted.

Summary.—Hypothyroidism is probably more often encountered than is generally believed. The diagnosis is often possible from clinical signs alone. The early or atypical cases are the ones most often overlooked. In these, basal metabolism determinations are of great value as an aid to diagnosis.

The treatment in most cases is most satisfactory if carried out with caution and continued long enough. There is a great tendency to relapse if the cases are not followed up.

GANGRENOUS BALANITIS *

By A. S. LLOYD, M.D.
Clinic of Charleston General Hospital
Charleston, W. Va.

Apparently simple conditions of the penis, if accompanied by the slightest signs of phimosis, may prove to be much more serious than was at first suspected, and may progress rapidly to sloughing of the entire penis, the local process being accompanied by most severe constitutional symptoms. It is with the purpose of emphasizing the danger signs and bringing again to the minds of practicing physicians the consequences of temporizing in doubtful cases that this paper is written.

Bataille and Berdal (1891) described a contagious balanoposthitis, and this seems to be the first account of the disease which is now known as erosive and gangrenous balanitis. Its newest and most familiar sobriquet, Fourth Venereal Disease, was applied by Scherber and Müller (1904). These and other investigators isolated a spirillum and a vibrione from the exudate, in this way confirming the disease as an entity, and the condition is now generally considered to be a specific infectious disease due to a symbiosis of a loosely coiled spirillum and a Gram positive, rod-shaped organism with pointed ends. The identity of this symbiosis as the etiological agent in Vincent's angina has been known for some time, and, according to some observers,

* Read before Kanawha Medical Society, October 9, 1928.

there has been a marked increase in the incidence of erosive and gangrenous balanitis coincident with the increase in Vincent's angina, or trench mouth.

Scherber, in a paper on "New Bacteriological Findings in Balanitis Gangrenosa," makes the observation in regard to the incidence of the disease that sometimes a long period elapses in which few or no cases of gangrenous balanitis occur. Then, suddenly, they appear in large numbers from all sides. This, to Scherber, seems to show that there must be a factor, as yet unknown, which favors the change of the saprophytic parasite into a virulent one. "It is the same factor that causes the endemic appearance of certain infectious illnesses, and it has its origin, perhaps, in meteorological conditions."

Symptoms.—The first thing noticed by the patient is an itching or burning sensation around the prepuce and this is followed by a thin, yellowish discharge of a characteristic foul odor. At this time, if the foreskin be retracted, there may be seen on the inner surface of the prepuce, or behind the corona, one or more small, superficial oral ulcers (erosive type). This is the ideal time to determine definitely the cause of the pathological process, for if it be due to a Vincent's infection every hour is of importance to the patient, since in many cases a few hours are all that are necessary to alter a comparatively simple case to one with a slight or absent chance to save the penis.

In determining the identity of the disease one makes use of the history, if it be relevant, the odor of the discharge, and the microscopic examination of the exudate by means of stained slides and the dark field. In making the differential diagnosis one must consider the possibility of chancre, chancroid, herpes preputialis, gumma, tuberculosis, gonorrhea, and balanitis occasioned by some organism other than Vincent's. Conclusive evidence can not be obtained from the stained slide, and the greater reliance is placed in the dark field examination, where the characteristic motility aids considerably in recognizing the spirochete of Vincent. Reasoner brings out that the presence of a few spironema Vincenti does not make the diagnosis. One must take care to clean the lesion and then collect the infective material from the lesion by inserting capillary pipettes deep into the lesion as described by Corbus. The presence of a predominating number of spironema Vincenti in material secured in this manner is sufficient to make the diagnosis.

Once the diagnosis is made, the treatment is based on the fact that the organisms are anærobic. In cases with simple ulceration and without gangrene or phimosis, preputial irrigations with two per cent hydrogen peroxide three or four times a day will, as a rule, cause a cessation of the pathology. However, in cases where phimosis exists, it is essential to expose the infected zone to the open by means of a dorsal slit. This serves the triple purpose of preventing gangrene by constriction, exposing the anærobic organisms to the oxygen of the atmosphere and facilitating irrigation with hydrogen peroxide or other oxidizing solutions. The irrigations should be made as often as the severity of the case seems to require, varying from every hour to every four or five hours. Extreme tenderness is encountered in most cases, making the application of dressings inadvisable in some cases, and, indeed, reaching the stage at times of rendering all local treatment so painful that one is compelled to resort to intravenous administration of the arsenicals with no local measures except the initial exposure of the parts to the open.

Corbus makes the statement that it is impossible for the disease to occur in an individual who has been circumcised, and, in view of the severity of the infection and the consequence of serious results, it is at once apparent that circumcision is much to be desired in all males as a prophylactic measure. In the series reported by Corbus there was a history in every case of either coitus oris or else wetting the labia or penis with saliva. However, several workers have reported cases in which no such history could be elicited, and this was true in the case reported herewith. It should be borne in mind, as one writer has remarked, that the history in such cases can not be taken always as absolutely reliable, since, after all, we are dealing with human beings, some of whom do not consider that it is always necessary to tell the doctor the whole truth about their most private affairs. The factors favoring the development of the infection are usually given as four in number: (1) preputial redundance, (2) phimosis, (3) lubrication of the glans or labia with saliva preliminary to normal intercourse, (4) coitus oris.

Following is the report of a case coming under our observation in the Genito-urinary Service of the Charleston General Hospital:

Case Report.—E. P., a white male, aged nineteen years. Past history negative in so far as concerns the present ailment. He had normal intercourse three weeks previous to admission. He denied coitus oris or use of saliva to lubricate glans or labia. One week before admission he noticed a yellowish,

thin discharge and slight edema of the prepuce. He went immediately to his physician, who gave him "some medicine" to apply and who advised cleansing several times a day. Prescribed treatment was followed, but the edema increased steadily and he began to have pain, which increased coincidentally with the edema. Finally, after six days of this treatment, while the symptoms became steadily worse, the patient changed doctors, and his new physician, recognizing the possibilities of the situation, immediately made a dorsal slit to relieve the phimosis, which was by this time rather marked, and sent him to the hospital.

On admission, the most marked finding before examination of the penis was the putrid odor, which was noticed before he removed his clothes. The penis was extremely tender, and was exuding the characteristic thin, foul-smelling pus. The edema was so marked that the extent of damage could not be accurately determined. About two hours after admission he was given a general anesthetic and a dorsal incision was made in the penis, extending completely through the corpora cavernosa and exposing the anterior two-thirds of the corpus spongiosum. A small amount of necrotic tissue was cut away, the wound was irrigated thoroughly with two per cent hydrogen peroxide, and a wet dressing of one to one thousand potassium permanganate was applied. This dressing was changed every two hours for the next four days. In addition, the patient received nine-tenths gram of neosalvarsan intravenously on the first and third mornings after the operation.

There was a slight pustular discharge of characteristic odor noted on the first two days after operation, the amount decreasing each time the wound was dressed. Tenderness, which was extreme at first, decreased coincidentally with the decrease in the amount of pustular discharge. At no time were the constitutional symptoms marked, the highest temperature being 99.4° and malaise being virtually negligible. The patient was discharged six days after operation with the wound still open. Plastic repair will be done as soon as all signs of tenderness and inflammatory reaction have disappeared.

This case presents one feature of especial interest, in that the incubation period was considerably longer than that of most cases. The time usually given in textbooks and noted by most observers is between four and eight days, although Berdal mentioned that he had seen a few cases where the incubation period was as long as four weeks, and the disease itself lasted four more weeks. As a rule, the incubation period may be taken as an index to the severity of the infection, the virulence varying inversely as the length of the incubation period. In the virulent cases immediate recognition is imperative, since the whole penis may slough in the space of forty-eight hours.

For a more complete discussion of the etiology, differential diagnosis, treatment, etc., the reader is referred to the excellent monograph by Corbus in Cabot's *Modern Urology*. It is not the purpose of this paper to present an exhaustive study of the disease, but simply to emphasize those points which will serve to prevent the occurrence of one of those unfortunate cases where the physician, through not having in mind this possibility, may procrastinate and temporize until the process has gone beyond the possibility of control.

REFERENCES

Bloodgood: *Jour. Am. Med. Assn.*, April 9, 1927.
Brams, David, and Pilot: *Arch. Derm. and Syph.*, April, 1923.
Bataille-Berdal: Cited by Corbus.
Bond: *Urolog. and Cut. Rev.*, April, 1919.
Corbus: "Modern Urology" (Cabot), Lea and Febiger.
Corbus: *J. A. M. A.*, June 7, 1913.
Corbus-Harris: *J. A. M. A.*, May 8, 1909.
Cross-Zevalkink: *Urol. and Cut. Rev.*, September, 1923.
Donovan: *Am. Jour. Med. Sci.*, February, 1921.
Jefferson: *Urol. and Cut. Rev.*, June, 1921.
Kaster: *Wisconsin Med. Jour.*, February, 1927.
McConnell: *N. Y. Med. Jour.*, August 12, 1916.
McCormac: *Jour. of Urol.*, May, 1925.
Owen-Martin: *Jour. Lab. and Clin. Med.*, September, 1917.
Palmer: *Urol. and Cut. Rev.*, May, 1927.
Pusey: *J. A. M. A.*, September 29, 1927.
Reasoner: *N. Y. State Jour. Med.*, July 15, 1927.
Reasoner: *J. A. M. A.* (68), March, 1917.
Reasoner-Gill: *J. A. M. A.*, March, 1927.
Robinson: *Texas State Med. Jour.*, March, 1927.
Scherber: *Wiener klinische Wochenschrift*, July 8, 1926.
Scherber-Muller: Cited by Corbus.
Scott: *Virginia Med. Monthly*, May, 1919.
Sutton: *J. A. M. A.*, March 9, 1918.
Tunnicliffe: *Jour. Infect. Dis.*, August, 1919.

WHEN IS GONORRHEA CURED? *

By R. J. CONDRY, M.D.
Elkins, W. Va.

In view of the prevalence of gonorrhea and the many problems it presents, the question, "When is this disease cured?" is obviously a very important one, and at the same time one very difficult to answer for a certainty. The reason for this lies in the fact that scarcely any two authorities agree as to the procedure to be followed or the facts to be relied upon in determining a cure.

Up to a few years ago, clinical evidence was all that we had to rely upon to decide whether or not gonococci were still present. Experience has since shown that such evidence was usually insufficient, to say the least. Very often the overcautious physician has forbidden a man to marry when he was per-

* Read before the Barbour-Randolph-Tucker Medical Society on August 8, 1928.

fectly fit to do so, just because a few shreds persisted in the urine or a non-infectious discharge occasionally appeared. On the other hand, others were allowed to marry who later infected their wives, with results that need not be dwelt upon here.

Today, bacteriology has supplied us with certain tests which, when performed by competent bacteriologists and considered in conjunction with the clinical evidence, gives us an exact method in deciding this important question.

In cases of acute gonorrhea, and particularly if confined to the anterior urethra in men and the vulva and urethra in women, it is usually quite easy to decide when a cure has been accomplished. In cases of chronic gonorrhea the decision is rendered much more difficult.

Clinically, it may be accepted that whenever there is an urethral discharge or pus in the urine, gonorrhea should be suspected. On the other hand, if the urine is free from pus and shreds, gonococcal infection in all probability does not exist. If a patient is not subject to relapses after sexual or alcoholic excesses, in all probability he is no longer infectious, even if at times a slight discharge is present or shreds appear in the urine. The mere presence of shreds in the urine does not signify gonorrhea, because many who have never had the disease have this condition.

The following routine, abstracted from a number of the authorities, seems to me a very good one to follow to determine whether or not a cure has been effected:

1. The Provocative Test: This is carried out as follows: The urethra is dilated with an anterior-posterior Kollman dilator, after which a 1% silver nitrate instillation is made into the interior and posterior urethra. The patient is then provided with glass slides to collect the resulting discharge for microscopic examination.

2. The following day the prostate and seminal vesicles are thoroughly massaged upon a full bladder. If any secretion is expressed, part is caught on a slide and stained, the remainder is transferred to a culture tube. The patient is then told to void into a sterile bottle. This urine is also examined for gonococci, and also cultured.

3. Examination of a condom specimen.

4. Negative complement fixation test.

In women, the authorities differ greatly as to the cure. Practically all agree that if the infection is limited to the vulva and urethra, and does not extend beyond the cervix, cure is possible. When the gonococcus invades the endometrium, adnexa, and adjacent peritoneum, a cure is very uncertain.

Before discharging a case as tentatively cured, repeated examinations just after the menstrual period must show:

1. Absence of profuse purulent vaginal discharge.
2. Absence of purulent discharge from Skene's and Bartholin's glands.
3. Absence of urethral discharge.
4. Negative smears and cultures.
5. Negative complement fixation test.

THE EARLY DIAGNOSIS OF ACUTE POLIOMYELITIS *

By GEO. M. LYON, B.S., M.D., F.A.C.P.
Huntington, W. Va.

Contrary to common belief, the medical profession has at its command a great deal of knowledge regarding infantile paralysis or acute poliomyelitis, as it is properly known.

It is an acute contagious disease, caused by an almost ultra-microscopic germ or filterable virus. It is spread by non-immune individuals coming in contact with active cases or carriers. The carriers, as in other diseases, are individuals who harbor the germs in their own body, and yet who do not suffer clinically from the disease and who give no symptoms of the disease. They are often the means of spreading the contagion. Susceptible individuals will not contract the disease if completely isolated from active cases or carriers. Therefore, all known contacts with active cases, all known or suspected carriers, and all known or suspected cases of acute poliomyelitis should be completely isolated for four to six weeks after detection. Many convalescent patients harbor the virus in their nasal and pharyngeal secretions for a considerable period after the acute stage; often three months, at times two years. Such cases constitute a considerable percentage of the carrier population. Closing the schools, churches, theatres, etc., has a definite preventative value along this line.

Watery or irritating solutions, used in the nose as preventative measures during epidemics, are dangerous because they remove the natural anti-virus properties of the nasal secretions. Oily mixtures containing menthol or coryfin may be helpful, as oil of menthol readily kills the virus. Oily mixtures do not interfere with the anti-virus properties of

---

* Abstract of paper read before the Logan County Medical Society at Logan, February 22, 1927.

the nasal mucous membranes as the watery solutions do.

It is the feeling of those who have worked much with acute poliomyelitis that from forty to eighty per cent of all patients having the infection never have any paralysis at any time during the disease. Because of this, and because of the fact that they are not recognized as such, the disease is spread in an "unknown" or "mysterious" manner. The term *infantile paralysis* is misleading, as not all cases develop paralysis, even temporarily so. The accepted term is *acute poliomyelitis*.

Serum from a human being recently convalescent from poliomyelitis is the only form of serum treatment that is at present acceptable. It is quite effective when used early. Drugs are of little if any specific value. They are useful in relieving distressing symptoms when they occur. The serum is most effective when given from two to four days preceding the occurrence of paralysis (early in the phase of central nervous system invasion), but is also probably of some value the first two or three days after paralysis occurs. In order to use the serum effectively, an early diagnosis is necessary. In the early stage, before paralysis occurs, it is impossible to accurately make the diagnosis without introducing a needle into the spinal canal and withdrawing spinal fluid at least once or twice. The fluid so obtained, when examined, shows changes that are characteristic of the disease, thus making a diagnosis of the condition possible from one to four days before paralysis, if any occurs. The ability to make an early diganosis, with the possibility of early administration of convalescent human serum, constitutes one of the most important strides in recent years to conquer the disease. It is essential that the most complete coöperation exist between parents and physician in permitting punctures of the spinal canal at an early date in cases suspected of being poliomyelitis. In this manner it is possible for the patient to have the benefit of the best medical knowledge and skill.

Acute poliomyelitis is spread in the same manner as acute meningococcus meningitis. The latter disease is caused by a larger organism, and one easily seen with the microscope. Both diseases are spread by direct contact with active cases and by contact with carriers. The spread of sporadic cases of meningococcus meningitis was not well understood until the war demonstrated the large number of the population that were meningococcus carriers. In like manner there are poliomyelitis carriers who spread the virus in non-epidemic times, causing the sporadic cases which crop up from time to time from apparently inexplicable sources.

As in meningococcus meningitis, so in poliomyelitis: relatively few people contract the malady because of the natural resistance they have to the disease. These two diseases have a low "rate of infectivity." Second attacks of poliomyelitis do not occur, as one attack confers immunity.

Flies, milk, and food have been suspected of acting as a carrier of the virus, but contagion from any of these sources is as yet unproven, although the epidemic recently studied by Aycock strongly suggests the possibility of milk as a vector.

At the Rockefeller Institute in New York they have been able to reproduce the disease in monkeys after growing the virus anærobically in a glass jar in an incubator. They have been able to do this even after as many as nine to twenty generations of the virus have been so grown.

While the popular conception of the present understanding of infantile paralysis is that the medical profession knows but little about the disease, in reality a great mass of wonderful and classic research has been done, particularly by a group of splendid workers at the Rockefeller Institute in New York. The disease is now really well understood as to causative agent, means of contagion, etc., and, while no specific drug has been found for either prevention or cure, the convalescent human serum is very successful in prevention and likewise in treatment when given early. It is possible to make a diagnosis before paralysis occurs.

It has been impossible to develop a satisfactory serum from animals, as only the monkey is susceptible to the virus of the human type of poliomyelitis.

In times of epidemics one can use human convalescent serum as a prophylactic measure, as it affords a passive immunity lasting from three to six weeks. Because of the scarcity of the serum, however, it should probably be given only to those children looked upon as being especially poor risks because of frailty, other grave disorders, etc. There is no reaction when the serum is injected intramuscularly, and it may be safely repeated at the end of every fourth week until the epidemic has passed over. It is not necessary to match the blood of donor and patient when serum is so given intramuscularly. It should be done if given intravenously.

There is a period of 24 to 48 hours during which time the only diagnostic findings to be made out are characteristic spinal fluid changes. At the end of

this period occur the symptoms and physical findings characteristic of central nervous system invasion by the virus. Then there is usually a period of 24 to 48 hours more before there is any paralysis. During this time the main findings are a definite resistance to flexion of the neck on the chest (neck sign), headache, hyperesthesias of the skin and tenderness on touching the muscles becoming involved, and a sensorium presenting a mixture of apathy and agitation. Then comes the period when paralyses begin to occur and a diagnosis is most likely to be made.

In all probability the most marked spinal fluid changes occur in the very earliest period, 24 to 48 hours before the earliest signs of central nervous system invasion are to be made out. The significant findings at this time are a clear fluid under slightly increased pressure, a globulin content only slightly increased if at all (Pandy reaction), and a cell count of 200-2,500 cells per cubic millimeter, with the bilobate cells predominating, sometimes constituting as much as 80 per cent of the total. Then, as the signs of central nervous system invasion occur, there is a fall in the cell count to a total of 100-1,000 cells, the percentage of bilobate cells falls rapidly and the percentage of mononuclear cells increases, although the total number of mononuclear cells falls but little during this period. The globulin content is still but little increased over the normal. By the time paralysis occurs the cell count has usually fallen to 50-400 cells, mainly mononuclear cells. The globulin content is raised above normal to such an extent that at this time usually there is a slightly positive or definitely positive Pandy reaction. The cell count returns to nearly normal within 10 to 20 days, but the globulin content remains increased a much longer time. All spinal fluid cell counts should be done immediately after puncture, at the bedside.

There are no spinal fluid changes until about 24 to 48 hours before the earliest signs of central nervous system invasion can be detected, although at times these symptoms are so mild as to go undetected not only by the parents but by the physician as well.

Where there is any invasion of the central nervous system by the virus, the spinal fluid findings are the most constant changes observed. There can be no paralysis without this invasion occurring. The virus enters the cerebrospinal fluid before it enters the tissue of the central nervous system. By the time the virus is localized in the central nervous system and symptoms characteristic of the disease are produced, it (the virus) has disappeared from the cerebrospinal fluid. For this reason the virus has rarely been recovered from the spinal fluid. Mindful of the spinal fluid changes, it is now possible to make an early diagnosis, which in turn makes the early administration of human convalescent serum possible.

THE HUMAN FACTOR IN CARING FOR THE SICK *

By FRANK LEMOYNE HUPP, M.D., Sc.D.
President of the Board of Examiners for Registered Nurses in the State of West Virginia
Wheeling, W. Va.

A wise President once said when writing on being human: "Here is the world humanity has made; will you take full citizenship in it?"

When Miss Robinson, the chairman of your program committee, invited me to address you and announced the subject, "Psychiatry and the Nurse," I quailed before the task, knowing that any effort of mine would fall far short of attaining your ideal in either method or accomplishment.

I wrote that I could not qualify, but that I would feebly attempt to address your association on some subject of my own selection. I had not given any serious study to philosophy since my college days.

I thought of Spaulding's *New Rationalism* with the development of a constructive basis of modern logic and science, with criticism of opposed philosophical systems. I consulted the aggressively original psychological treatises of Harvard's William James, and wondered how all this could be applied to nursing.

I assumed, with the Harvard professor, that my hearers and you, my best friends, would relish a mass of analytical technicalities and that you might care more for concrete practical application, particularly from a member of the examining board or from a humble surgeon teacher.

What is needed, as Dr. Hibben has said, is not merely the absorption of knowledge but its assimilation and its transmutation into moral conviction.

The aim of education in a training school is to make the individual something more than an interested hanger-on in the march of hospital progress; a more vital thing than a barnacle or uninterested parasite on the medical ship of state.

Every nurse in our accredited hospitals should be so taught that they will find supreme pleasure in thinking things out for themselves and not accepting unquestioningly the thoughts of others, learning to

---

* Address delivered before the West Virginia State Association of Nurses at Martinsburg, September 29, 1928.

evaluate signs, symptoms and facts as seen and taught at the bedside and in the operating room.

I like the way Maude B. Muse, of the Teachers' College of Columbia University, deals with psychology. At the time when Socrates taught "Know thyself" and Aristotle wrote his famous treatise on "Psychology of the Soul," this subject was merely a chapter in the study of philosophy.

Some one has facetiously remarked: "Psychology first lost its soul, then it lost its mind; next it lost its consciousness, but it still has behavior after a fashion, and it is well defined today as the science of behavior."

Miss Muse has a keen appreciation of the importance of the human touch and the psychology of nursing when she summarizes:

"The nurse needs psychology because she is a student making adjustments to a new and strange environment. She needs an impersonal understanding of people, especially of people when ill. She needs elementary psychology as a basis for future study of mental nursing and psychiatry. She needs psychology because she must, whatever may be the phase of nursing which she chooses upon graduation, become a teacher of health and preventative therapeutics."

A knowledge of psychology is an invaluable asset to the young nurse. Skill in giving treatments, good technique in doing dressings, keen observation of symptoms and knowledge about medications do not insure good nursing without a personal, sympathetic understanding of the problems involved in nursing the mind.

More than forty years ago Loyde Sampson somewhere wrote that this is not a world of chance. The green blade, the tinted leaf, the brilliant flower, the frond of the delicate fern, come and go in matchless order.

The whispering winds, the ebb and flow of the tides, even the revolving planets move on and are as the laws of nature decree; yet upon man, creation's crowning achievement, is bestowed the gift of choice. He may plant or not, but, if he would reap, the dry and apparently lifeless seed must be sown upon the prepared ground ere the imprisoned germ can burst its bars, develop and ripen in fields of golden grain.

What a wonderful inheritance memory is! Some people can gain mental supremacy by the act of cultivating concentration, by the proper application of their five senses.

What a blessing it would be if a nurse, when in training, would school herself to remember at least four-fifths of what her eyes have seen and what her ears have heard, instead of one-tenth, as I had a nurse once tell me. It is said that Damrosch, the great writer and teacher of music, and orchestra leader and impresario, has an ear so sedulously trained and acute that he is able to detect the slightest error or discord of a single instrument in his ensemble of an hundred pieces. Dr. Latson writes interestingly of the development of this faculty among the ancient Greeks; it was not at all unusual to find a talented patrician who could recite, *verbatim*, the entire poems of Homer, the *Iliad* and the *Odyssey*. How well do the students of Professor Lynn, at old Washington and Jefferson College, remember that it mattered little whether his *Lysias* or the *Iliad* were upside down or whether he had a book before him or not. He was one of God's noblemen with a colossal memory.

The author of *Mental Supremacy* has written that Cyrus knew the name of every soldier in his great army. Gladstone could speak for hours before the English parliament, presenting financial details running into the millions, not using a note.

How much the nurse is able to remember through her mental supremacy; how keenly can she prophesy, feel and anticipate; how well she can direct her activities at the bedside with this gift at her command; what she can gather from a close study of her patient's face and through her knowledge of psychology, how she can differentiate the real from the assumed. Poignant anxiety, the approach of shock, the anxious, foreboding look in the eye, that indescribable something, a definite signal of an approaching cataclysm, all observed, even before the telltale throb of the flagging radial announces the inundation, when the angel of death waves you away, if your vision is blurred or your memory asleep.

Away over in Venice, this summer, we looked with awe and reverence on the ancient palace where Robert Browning wrote these lines for his *Paracelsus*:

"There is an inmost centre in us all:
Where truth abides in fullness; and to know
Rather consists in opening out a way
Whence the imprisoned splendor may escape,
Than in effecting entry for a light
Supposed to be without."

Dr. W. J. Mayo, in his instructive and interesting survey of the relative value of special senses in surgery, has said that if there is a sixth sense, it is

intuition; that instructive summing up of memories and other evidences collected by the special senses and correlated in man's consciousness.

He further writes that there is a growing tendency in the medical profession to depend more and more on mechanical aids and laboratory tests, with neglect of those fundamental senses on which we are entirely dependent for our knowledge of the outside world. He declares, with emphasis, that this should not be.

Too often your work in caring for the sick is done according to routine, in a perfunctory way. While we are happy in the reflection that you are, by virtue of your calling, a dependent and integral part of our medical profession, you must remember, as Dr. L. B. Wilson of The Mayo Clinic has said, our two professions are not now nor never have been pure science with humanity left out. The human animal physically, but still more psychologically, writes Dr. Wilson, is subject to too many variants which may not be ignored in the diagnosis, nursing and treatment of its abnormalities. Medical science and, shall we say, the science of nursing, it is true, have become more and more exact; more real sciences. Humanity has changed but little in the multiplicity of its variations. The human animal is still in a most primitive stage, not only physically but much more so psychologically.[1]

Great success has been made in the training or reëducation of both the physician and the nurse in modern times, and this has been admirably brought out by Dr. Joseph Collins in the current issue of *Harper's Magazine*. He stresses the necessity of such organization of specialized skill in the field of medicine, which includes nursing, as will insure the patient advice and service of the highest order. We all know how impractical it would be for the physician to have his own laboratories, in the full sense of that word, and assistants, in such a number as to cover the entire field of his practice; hence the development of group practice and hospital reference. But the service of the nurse or the physician must never be impersonalized. There will ever be need of those who have infinite skill with sympathy in caring for the sick, who have the quality of that human touch exemplified in the characters of Willum McClure of "The Bonny Brier Bush," and in Florence Nightingale, the latter of whom, in her visitations with the lamp, were always a God's blessing to those who suffered and died. Both of these kindly spirits had the qualities of those who ennobled and endeared their professions. We must all agree that organization has made the education of the nurse and the doctor more human, more efficient, but in achieving this let us remember that the patient has a heart and a soul as well as a body and a case number, and that we need every one of our five senses and the intuition Dr. Mayo speaks of as a sixth sense, in our serious endeavor to bring them back to life and health.

Roger Lee speaks of patients as primarily human beings, and as human beings they have very definite psychologic reactions. These psychologic reactions often influence profoundly physiologic processes.

It would be well to remember that at least part of the nurse's function is what Dr. Collins has said is the physician's: she must know that it consists of counseling, suggesting, orientiating, extricating, reconditioning, encouraging, solacing, and understanding—all pointing toward new neural pathways.

There is little in the pupil's classroom education that prepares her to carry on along these lines. Certainly, to develop such traits of character she must have a natural inclination for it all; she must learn to develop them along with her intuition and experience, at the bedside.

William James has written: "Continuity of training is the great means of making the nervous system act infallibly right."

Had I the time, I would like to tell you at length and with emphasis the necessity of our pupil nurses receiving practical training in some psychopathic institution or state hospital. This is done in some states, notably New York. I would commend for your reading the far too short but instructive paper of my friend, Miss Harriet Bailey, R.N., the efficient secretary of the nursing department of the University of the State of New York, which appears in the May issue of the *Journal of Nursing*.

She concludes her paper by saying: "There is a special technique, if you please, to be employed in the care of borderline and frank mental conditions, which no amount of classroom instruction can possibly give the student."

That I may not in the smallest degree be misunderstood in our effort to impress upon you the necessity of employing all of your faculties in the anticipation of your patients' needs, I want to caution you against what is well termed "meddlesome activity."

Routine orders are all very well where exercised

1. Wilson, L. B. *Minnesota Med.*, 11: 365 (June, 1928).

with judgment, but if otherwise carried out may lead to failure or disaster.

Dr. B. F. Taylor and his associates have written instructively on this subject, and their ideas are so thoroughly in accord with my own observations that I yield to the temptation to quote: "The essential point we wish to make is that in a large hospital with young and inexperienced officers (or unbending head-nurses) who follow a punctilious code or ritual regardless of the even course of the patient, the standing orders should call for as little meddlesome interference as possible. If any patient develops symptoms which require purgation or enemas, these can always be prescribed; but they should not be made compulsory for the patient who is convalescing smoothly and rapidly.

"Furthermore, the standing orders must not be so ironclad that the very life of a man coming in with an acute intestinal obstruction, a perforating appendix or a gangrenous Meckel's diverticulum, is to be jeopardized. The salvation of these unfortunates must depend on the intervention and direction of some interne or head-nurse and requisition their multiplied experiences always, or, if possible, directed by the attending surgeon.

"The modern hospital is more and more needing —yes, demanding—the knowledge and exercise of psychology on the part of the nurse.

"She must be qualified to read her patient through and through, and so be prepared to interpret with quick perception what her five senses and experience have taught her is the essential, resourceful, and perhaps life-saving thing for the moment."

Genius in the nurse is not so much a heaven-sent gift as it is an infinite capacity for using her brain.

Increase your driving power, but do not exhaust the potentialities of your engine. How beautifully Fosdick has put it: "When Magellan circumnavigated the earth, he was hunting for the truth about the globe. When Galileo swept the heavens with his telescope, he was seeking in God's wonderful canopy a larger vision of the universe. When the great Pasteur and Lister worked and prayed that disease and infection would some day yield up their secret, they were diffusing an atmosphere of truth, all for the good of their brother man. When St. Augustine prayed, 'I will seek Thee that my soul may live,' he, too, was hunting for the spiritual, without which life is not worth living. To what fine meanings and noble aims can this hunting desire or instinct be expanded!"

Regarding experience, Oliver Wendell Holmes has a very happy way of defining experience. In his *Medical Essays* he writes: "Experience means the knowledge gained by habitual trial, and an expert is one who has been in the habit of trying." The Autocrat continues: "Book knowledge, lecture knowledge, examination knowledge, are all in the brain. But working knowledge is not only in the brain; it is in the senses, in the muscles, in the ganglia of the sympathetic nerves, all over the man. One may say, as instinct seems diffused through every part of those lower animals that have no such finely textured organ as a brain. Mark what a large experience has done for those who were fitted profit by it, and you will feel convinced that, much as you know, something is still left for you to learn."

How true it is we want our human touch to come from the nurse and the doctor, and not so much from the director or superintendent of the hospital.

Woodrow Wilson once gave expression to a quick and vital thought when he said: "We do not want our poetry from grammarians, nor our tales from philologists, nor our history from theorists. Their human nature is subtly transmuted into something less broad and catholic and of the general world. Neither do we want our political economy from tradesmen, nor our statesmanship from mere politicians, but from those who see more and care for more than these men see or care for. The art of being human begins with the practice of being genuine and following standards of conduct which the world has tested."

When we stop to reflect on what was once expected of the caretakers of the sick; how the hospital, not so many years ago, was little better than a boarding house for the disabled and infirm, we feel justly proud, in the light of the new knowledge and the new orders of things. When we stop, look and listen, we can not but exclaim with England's sagacious Prime Minister Balfour, when he witnessed the effort of science to unify physical nature: "It excites feelings of the most acute intellectual gratification. The satisfaction it gives us is almost æsthetic in its intensity and quality. We feel the same sort of pleasurable shock as from the crest of some melancholy pass we first see far below us the sudden glory of plain, river and mountain."

Yes, we who have taught and examined would have you hitch your wagon to a star and, as you travel, keep in mind that the sky is the limit. You seekers after truth and more light might say with

Huxley: "The man or woman of science is justified not by faith but by verification."

Robert Duncan concludes his remarkable presentation, *The New Knowledge*: "In the beginning God created, and in the midst of His creation He set man and woman with a little spark of the Godhead in them, to make them strive to know, and in the striving to grow and to progress to some great, worthy, unknown end in the world.

"He gave them hands to do, a will to drive, and seven senses to apprehend; just a working equipment; and so they have won their way so far out of the primitive ways of pre-history.

"To know is to work and to do; and a new thing done, a new experience is forever a rung in the ladder by which one climbs, until the summit is attained and the ladder can be cast aside."

What an opportunity on the part of the nurse in her intimate inquiries into the human faculty to comfort and reëducate her patient who is about to pass through some serious ordeal! Perhaps the terrors we too often observe are transmitted through inheritance, or, more usually, through the anxiety and tears of solicitous friends.

There is one other way, and that is through the unfortunate headlines of the daily press. How often we read: ". . . died following an operation," or "a serious operation failed to relieve." The psychic effect of these impressions and others is difficult to estimate. One scarcely picks up a morning paper but that directly and unintentionally the modern operating room and the skilled surgeon does not receive a black eye, to say nothing of the terror instilled into the mind, weakened by disease, of the patient awaiting relief.

Then there are certain fanatics or cultists who distribute their pestilence, lending their opposing influence to the efforts of the nurse, physician, the laboratory, and the hospital.

It was only recently that an otherwise sensible mother declared that she would rather her child would die than be inoculated with a vaccine made through the suffering of some animal. She was opposed to animal experimentation in all forms, however mercifully conducted.

Sir Francis Galton has observed, as we all have, who spend our summers in God's great out-of-doors, how gregarious animals are quick at learning terrors from one another, and how their safety lies in mutual intelligence and support. When most of them are browsing, a few are always watching, giving the alarm when the danger is near; intelligently directed instinct.

In man it is an inheritance, the unsuspected result of early education, influence or suggestion. When one inquires into the human faculty, let him read the influence of Dante's writings, of the horrible torments of the damned.

It was only this past summer we had ample opportunity of observing the influence of Italy's talented exile on the artists of his time; the realistic pictures and frescoes, showing flames, flesh hooks and the harrows, indicating the transforming effect of those cruel times fifteen or twenty generations ago.

Psychic influences are to be definitely combated by the modern nurse, if the gulf between the timid sufferer and the operating room is to be forever bridged. Every patient you nurse presents a definite and separate problem which must be studied carefully and to which no fixed formula will apply.

We would have you cultivate, with your optimism, unbounded patience. Be sedulous in collecting and remembering facts; have more than just a fair share of resourcefulness, always an increasing humanity, and an abundance of common sense. Let the slogan of your association ever stand out as a beacon: "Be educated and stay educated."

In addition to other helpful books and mehods in the development of your work, as a part of your mental discipline and ordered skill, I would like to suggest a familiarity with such epoch-making medical papers as The Oath and Law of Hippocrates, The Journeys in Diverse Places by Ambrose Paré; On the Motion of the Heart and Blood in Animals, by William Harvey (1578-1657). The latter paper was given to the world just 300 years ago, and the anniversary of its presentation by this son of Great Britain is now being observed. Jenner's Original Publication on Vaccination Against Smallpox; Sir Joseph Lister's classical paper on The Antiseptic Principle of the Practice of Surgery; The Physiological Theory of Fermentation, by Louis Pasteur; the thrilling story of The Discovery of Ether, by Morton, and Dr. John C. Warren's description of the first operation under ether. These masterpieces of scientific medical research, patiently executed even as such papers are today, without the true reward which they so richly deserve. The real satisfaction and reward coming when the worker realizes that by his efforts mankind has been freed of an age-long evil. It is such literature I would

commend to you, rather than spending your leisure on valueless or ephemeral writings.

Some one has well said that truth spreads by testimony. There is a sort of high compulsion which lofty spirits recognize to bear witness to the truth wherever found. A reader who has dug treasure from a book spreads the news of his discovery to others whom he desires to enrich.

Away back in 1635, Sir Thomas Browne revealed his personality in the *Religio Medici* when he wrote: "There are two books from whence I collect my divinity; besides that written one of God, another of His servant, Nature, that universal and public manuscript that lies expanded unto the eyes of all; those that never saw Him in the one have discovered Him in the other."

You are living in a world and are partakers of the fruits of a profession where humanity is not only necessary but is demanded. Your sisters who have blazed the trail have fixed and tested the standards. Will you partake of its citizenship?

Have you ever visited the charting or log room of a transatlantic steamer? In the seclusion of your room, carefully inspect your life chart. What record shall be made today? Alter your course, slow down, or full speed ahead?

THE RELATION OF THE HOSPITAL STAFF TO THE DIRECTORATE AND SUPERINTENDENT *

By HARRY M. HALL, M.D.
Wheeling, W. Va.

Health—a much-discussed subject in this year 1928—is gradually becoming, out of sheer weight and importance, one of the primary occupations of mankind. It seems rather strange and, as a matter of fact, it is a paradoxical situation that the existence of disability and illness should be an engaging subject to so many people and at the same time a question of complete denial by others. The world's history abounds in such phenomena, and, usually, for every one who in the beginning of an investigation says a thing is so, some one will be found who says it is not. So we have the interesting presentation of people desiring to understand to cure, to prevent any entity called disease, and another contingent bent on the promulgation of the news that no such thing as disease exists at all. It would always seem to us that this latter class had visualized an ideal state which all of us would fain have happen and which civilization may ultimately reach, but which is not here now. It is the here and now that concerns all practical people. Hopes and prophecies are all right, in their way, but they cure no one of a renal colic or an acute appendix.

We have also in recent years to think of certain divisions devoted to religious devotion who have come upon the scene with the power of religion to heal certain conditions frankly called by no disease.

These two examples of an attitude toward disease are here featured as having in a sense to do with a tendency by the layman to view illness and disease from other than a medical standpoint. There are, of course, many other agencies in the field of curative medicine which come under the general heading of cults and which can be said to use in one way or another ideas quite familiar and in many cases discarded by the profession of medicine. These treat the ignorant, the hopeless, and, in large numbers, the thoughtless. Lastly, we have the field of patent medicines, in which instance the laymen do their own diagnosing and, as it must follow, decide on their own treatment and dosage. In a general way the foregoing represents the laity who do not use either the medical profession or the hospitals.

In an ideal situation the medical profession should have charge of the hospitals. It is their workshop, so to speak. It would be idle and perhaps absurd to think of a doctor running a steel mill or a specialist stepping into the board of directors of a glass factory, and yet, strange to say, it has been done. Furthermore, the directorates of many of our large concerns have members who know no more about the actual processes carried out in the various enterprises and industries they own than a child would.

The idea is entertained, however, that medical men are, to say the least, poor business men, and that in their investments, the management of their own business connected with their receipts and expenditures, and the conduct of their purely professional transactions, they represent the quintessence of poor judgment. This notion is more than likely to be held by men who have had either the benefit of inherited wealth or "lucky breaks" in acquiring it.

In a fairly eventful life the writer has come to the conclusion that the statement that medical men lack business judgment as a class is entirely and conclusively incorrect.

The basis on which the general run of business men looked askance at a doctor's perception of money and its use was founded on the fact that he

---

* Read before the Hospital Association of West Virginia, at Charleston, on December 3, 1928, and published simultaneously in *Hospital Management*.

never had much of it, which, after all, is not so bad a bit of evidence to introduce for the promotion of such an opinion.

Now, why has a doctor not had anything like the money he ought to have had in the past? Has it been his fault? Not a bit of it. In the first place, he is positively the only individual who, in his dealings with the public, has consistently and habitually given a part—and a big part—of his services away without any pay. After thirty years of experience with the dispensing of medical services the writer of this paper is convinced a medical man has no more business giving his individual services away than any other man, and that advantage of his general humanitarianism was taken in the beginning and upon it a pernicious and insidious tradition was established which succeeding generations have developed into an absurdity.

We have a pauper. He gets some groceries—but you can depend upon it, the county or an associated charity pays for them. He obtains drugs, but the druggist is remunerated. Shelter comes, either in a mission supported by funds or in the almshouse. He may be in trouble or a controversy. The court furnishes him with a lawyer—usually a young man just admitted to the bar, whose standing is about the same as that of an interne in a hospital. He is ill and goes to a hospital. He gets a bed equal to what some one else is paying for—for nothing. The state may pay a little of this, but not much. If he is ill, a seasoned practitioner sees him. If he needs a surgeon, that gentleman is usually one of the best in the city. He obtains, perhaps, hundreds of dollars' worth in each case. What for? Nothing at all. Private practice runs the same. This is the reason a doctor has no money. It is an absurd reason and the idea that it puts a doctor on a higher level in a community may sound beautiful but it has not worked very well to give him a business standing.

A good many medical men, especially those who are independently wealthy, are very prone to say a doctor does not want a business standing. He certainly not only wants it these days, but he actually must have it to get along, and the majority of medical men who are what is known as "well fixed" have made their money in other lines.

The second reason why medical men may have little money is not through any fault of their own but because their work takes concentration, occupation, and continuity. They, perforce, have to trust their funds to that branch of so-called business men known as investment brokers. It is useless to describe many of these, as their point of view is too well known. They may mean well. No doubt they are honest as regards their bookkeeping. But that many of them give unprejudiced and unbiased advice is a fallacy. Their answer is that they are not infallible and are human. Of course they are not, but they have it arranged so the investor exclusively pays the price of the adventure. That there are many good investment men is quite true, and these are generally rather inclined to take care of the medical profession very well—regarding, in a good-natured way, this class of investors as rather childlike. But the fact remains the medical profession is picked out by a certain kind of investment broker as good material to enmesh in rather hazardous procedures. The doctor frequently loses, whereupon he is dubbed a poor business man. The real truth is that he has put faith in another class of men as having the same fidelity to their work that he has. He finds he is grossly mistaken. The fault is not his at all, so far as business is concerned. The error, if any, that he is guilty of, is in trusting a certain kind of business man as having ideals and principles he does not have. About ethics, they are ignorant. An unbiased view they simply couldn't have if they tried. The sum total of all this is that the doctor will have to do his own thinking along financial lines.

These two factors make the doctor appear as a poor business man, a poor manager, a poor executive. It is not an honest deduction at all. The way in which a number of medical men now conduct their offices and their work is a marvel of system, good judgment, and business ability. Let us take the Mayo brothers as an example. We doubt if the General Motors or the United States Steel Corporation have better-managed concerns than the so-called Mayo Foundation. No detail is too small, no factor too large, for these two surgeons and their associates to have well under their eye. The town of Rochester, Minnesota, should be called Mayo City, for that's what it is. They take in hotels, restaurants, and even cafeterias. The whole town breathes Mayo, and when you come to think of the fact that these two brothers raised the city from obscurity and difficult approach to a spot that is known all over the world, it is right to give them your worship.

This is, however, only one of many instances that may be cited to show that where medical men have actually taken the time, they can compare as favorably in business acumen as any other industrialist, banker or other acquirer of this world's goods. We

have taken the time to observe this constantly growing tendency of medical men with a good deal of interest. In looking over our own acquaintances we have the pleasure of observing that nearly all of them have developed, in the last few years, remarkable business ability, and some of the wealthiest men we know of are medical men. They are not millionaires, to be sure, but they have acquired wealth from $50,000 upward and are, for the most part, independent. More and more they are giving some heed to their collections as well, and it is no badge of honor to be known as a poor collector in this modern day—rather, it is taken somewhat as a disgrace.

Up until today, then, it has been considered anything but good policy to let a doctor have any say whatsoever in the operation of a general hospital. While it is his workshop and there would be no hospitals if there were no doctors, yet it has been found that his place in a hospital is purely a matter of professional contact. Hospitals managed by doctors have only too frequently been financial failures. Professional men have made successes of many institutions in which they have worked—but these have been in the operating rooms and the wards, and not down in the business offices. We once knew of a crowd of business men who took over a new hospital which had just replaced an old one in which the medical staff had run about everything, including the business side, and when they assumed charge they very promptly instructed the doctors they had failed on the business side and therefore they were in the future to confine their activities to strictly professional performances. Some years later, however, this institution presented the same difficulties.

The operating of a hospital has almost the identical problems of a hotel. We should say they are exactly the same. The hospital is probably the more difficult, because the guests at a hotel are, for the most part, well, and they come and go with little to mark anything out of the usual. A system of floor clerks, the return of keys, and an abiding trust in the honesty of guests who, for the most part, know there is a law with severe penalties if they "jump" their bills, makes the work of the room clerk somewhat simple. Outside of this difference, the work of buying supplies, feeding and housing, improvements to service, hiring and discharging employees, remains about the same. Now, it is not every so-called business man or collection of prominent citizens who can run a hotel.

Scattered over this country are a number of hotels in small towns which local business men are trying to run—and simply can't. This brings us at once to the idea that just because one is a business man is no indication at all that such an individual can successfully operate a hotel. It follows they will have no more ability to operate a hospital, which, as we have said, in many respects is like a hotel in its problems.

The blunders and upsets in the non-professional side of the conduct of hospitals very seldom come up into the light of day, but there must be a good many. Beginning at the engine room and ending up with the purchase of instruments, lights, and equipment for the operating room, there must be all along the line a myriad of chances for carelessness and abuse that nothing but the most alert care and scrutiny will keep the average institution from running into the red figures on the ledger and the cost per day per patient up to six or seven dollars.

We have seen a hospital with such exquisite furnishings as would tempt you to judge it as one of the finer hotels at Palm Beach, and yet which did not have a regular x-ray man. The maintenance of proportion and perspective is, therefore, another problem in the direction of a hospital. There must be a constant supervision, then, to see that no one side grows at the expense of another, and we suppose the final test of any executive is that he never allows this to happen.

The superintendent, then, must maintain a balance between the staff (which is to say, the members of the medical profession), the superintendent of nurses and her organization, the laboratory, the operating rooms, the x-ray department; the kitchens, both regular and diet; the help of all sorts and conditions, the steward and his following, the housekeeper, the out-patient department, the internes, the office force, the directorate, and last, but by all odds the most important, the patients and the public.

This sounds like a big order, and it is. It is quite enough to tax the ingenuity of any one man. In the list there will be some one or other activity which will show up as a weakness in any superintendent for the simple reason that there is scarcely any human being who could hope to be a master in all these lines. He probably does not exist. After all is said and done, however, the one division that is incumbent on any superintendent to understand is his medical staff, and it is just as much an obligation for the medical staff to understand him.

The American colleges of surgeons and physicians have come into prominence in the last four or five years as stepping into a hospital and, in a number of particulars, arbitrarily instructing it as to what it can do and can not do. In the main this interference, if such it can be called, makes for a higher class standard than most likely would be otherwise, but there must, on the other hand, be a point where this must cease to direct.

This point will ultimately have to be decided upon if a hospital is to maintain an individuality. There is a movement on foot, we believe, by the American Medical Association (which, after all, is the organization that should have the supervision very largely in its own hands) to find out what is the actual physical worth of each hospital and to classify it accordingly so that internes and the general public may know just what its standards actually happen to be, and a hospital that is sincere in its aims, proficient in its surgical and medical care, and economically and ably administered, will have a rating significant of the same, while a poorly mangaed one with indifferent service will have to pay the penalty. In no place is this so badly needed as in the interne service, where a mere Class A rating is not evidence enough to allow at times for the recognizance of a good interne who has served a first-class interneship being accepted by a sister state without additional and ofttimes unnecessary work.

It is the badge of indifference not to note that, every year, hospital service becomes more and more complicated. The ever-shifting scene makes the work of the hospital medical staff become a rival, after a fashion, with the county medical society, and in hospitals where the staff meets perhaps every week or two considerable work is necessary to keep the aims separate and apart. This does not so much matter where a city has but one or even two hospitals. It is quite a complication where there are a half-dozen.

In the last five years the hospital conference has steadily assumed an ever-increasing emphasis in hospital management. This has served one purpose above all else, and that has been to bring out in well-managed institutions the relation of management from the lay side or business end with that of the professional or medical end into the light of day. It represents, as in affairs of state, open diplomacy as against secret treaty.

Inasmuch as it has been argued in the beginning that as present constituted hospitals must be operated by two separate groups, one the superintendent and directorate and the other the professional or medical and surgical staffs, it becomes a self-evident fact that there must at all times be an *entente cordiale* between the two. The successful hospital is the one, of course, where each of these two groups recognize where their limitations exist and do not encroach on the territory of administration of the other. In a way this may be compared with the affairs of state between different countries just as the management of a hotel can be compared with that of a hospital. Where the staff of a hospital and its directorate understand the rights of the profession, you have in effect the always admirable relations between Canada and the United States, and where they do not understand, and each one is highly sensitive and jealous of its prerogatives, you have a situation akin to the turbulent Balkan States.

Inasmuch, too, as war is always around the corner in international relations, just so is disagreement always potential as long as human nature remains as it is in the relations of hospital management.

A superintendent, backed by an autocratic, unintelligent board of directors who possibly never attend the meetings and know nothing of what is going on, meeting a staff the members of which have no settled ideas among themselves, can well bring the best hospital ever designed and equipped into disrepute.

One way, therefore, that has been found is to have an administrative board in the staff, known in some places as an "advisory board," picked by the president of the medical staff and composed of not over five members. A larger number simply spells long committee meetings and undue deliberation that, as every one knows, "gets nowhere." The care with which this board is selected indicates the minimum of trouble later on. These five members meet the superintendent in friendly and advisory conference, either every week or less often, and go over those matters that touch the interlocking relations of medical and surgical procedures with that of direct hospital management. The small number gives the necessary intimacy to the conference and often allows of the successful termination of matters which are often "allowed to die shortly after their birth."

The personnel of this advisory body is no small or insignificant executive gesture. In every medical staff there seems to be wide and quite diversified elements—groups which move in concert. The advisory board must in the long run represent, either directly or indirectly, all of these divisions. If it

does not, then irritating and unpleasant situations will develop which would never have arisen had more care been used in the selection of this board. An executive medical officer simply can not pack all his close friends on such a committee. We have in mind a hospital where the advisory medical board has not been changed except in necessary movements of one member or so in four years. On it have been men who did not think alike in many particulars; in other words, there were the radical and the conservative, and yet its work has been admirable, and in two or three trying periods of that hospital it is very evident the outstanding work of that committee carried the hospital successfully through the turbulent and unsettled seas. The general staff probably never will know the many excellent pieces of wisdom and administration that crowned the activities of this seasoned body of men. The work well done will constitute their reward. All matters of direct bearing on the hospital, from the standpoint of the profession, are submitted to the superintendent and he in turn presents those questions of a purely scientific matter which complicate his activities and on which he very plainly can not be expected to have a proper conception.

The hospital superintendent, then, must be a man of rather diversified qualities and of more than ordinary composure. A lot of scientific men pursuing their vocation are at best not always restrained in their ambitions. It is difficult for them to tolerate delay if they feel they see a success to be attained. Ever have they been overzealous, too enthusiastic, and not always as practical as expediency would dictate. Medical men are no exception, perhaps. They have in common with other technical and scientific men a tendency to disagree among themselves. Their ideas of how to run a hospital differ considerably, and so the hospital superintendent must listen to those who would have his hospital ultra scientific and more of a research laboratory and those who are in for operating it on very practical lines with little thought of the educational perspective. No wonder they are at times befogged. The successful superintendent will allow neither the one nor the other to overinfluence him. The moment any hospital executive allows either the one or the other of these factions, or any other faction, to rule him, his doom is sealed. It may come slowly, but it will come. We have seen a perfectly able superintendent and, while in no manner so marked, even a sister superior suffer considerably in the loss of prestige and power by the mere listening too much to one or the other of these main divisions of hospital medical service in the staff. We know of no other executive who is any the more compelled by the nature of things to maintain an impartial course than a hospital superintendent. This means secretive as well as in the open. A superintendent who is maintaining an open air of impartiality while secretly playing in with one or more factions of his hospital, is really and truly treading on a sleeping volcano that most certainly will erupt some day. It is a difficult situation requiring great force of character, and this is what a hospital superintendent must have.

The medical staff may look all-important to a superintendent at one moment and the next must make him think his directorate is all-wise and the chief cornerstone, but a real point on which the superintendent must constantly keep his eyes (and which is, after all, why he is where he is) must be, in the final analysis, his patients. When all is said and done, they are always, to the exclusion of all else, his serious aim and charge. Every day he must ask himself the question, "Are the patients in my institution getting the best there is to get in order to regain their health with what under my direction is being done?" If they are not, then every department, including the medical staff, must be brought into line, irrespective as to how well satisfied they may be with themselves, to see that this is done.

The tendency in some localities is for the closed hospital. This may have its advantages, but it also has its drawbacks. A closed hospital is doubtless easier for the superintendent to manage, as he has a smaller group to watch. This smaller group, however, has always a tendency to become autocratic, so in the end the troubles may be about the same in number. It is idle to suppose the men who are shut out are going to stand meekly by with no place to go. They will, of course, find a way, and in finding it some unpleasantness may develop and some rough measures may be employed. Restriction and segregation have always gone so far in the world's history and have been quite successful. The career of Napoleon is a brilliant example. Sooner or later there is a French revolution and much blood is shed to gain back the rights, a mêlée that might have been avoided by a better display of tolerance and fair play.

Here and there, men of forceful personality, as in the cases of the Mayos and Crile, develop their own ideas of hospital standardization; sometimes either as visions of what is to come later for others or to fit into particular beliefs of their own. It is quite right for them to have their own hospitals, and

it saves a great deal of useless debate and disagreement over details for such men to go unto themselves where, if their ideas are really of benefit to their generation, others will sooner or later have to come to them to learn. It is quite remarkable how fortune seems to smile on such hardy pioneers, and those that have been worth so much to their contemporaries seem to defy the old rule that you have to die to become famous, and these men have, in their prime and comparative youth, carried on their own hospital administration not only from the professional but also from the administrative standpoint.

Luckily, in most hospital directorates there is always one or more men who actually take pleasure and derive inspiration in coöperating through the superintendent with the hospital staff. In almost all boards we have ever seen there have been just such personalities. They have probably saved many a hospital from humiliation as to finances. Throughout the country, by "drives" and other such means, huge sums have come to hospitals, and so it amounts to the fact that the kind of hospitals you have indicates the kind of city you have. This does not mean that only huge edifices are good hospitals; it merely signifies the public's interest in a hospital. Health and its relation to life is fast becoming the leading interest in life, and the place a hospital stands in a community but shows the measure of that immense interest. These interested members of a hospital directorate are the link that connects the hospital with the public.

However, the man who has gained the idea that only big hospitals do good work is mistaken. A hospital, like everything else, can become too large, the overhead too much, the lack of control of individual detail too pronounced, and the invalids, instead of being personalities, are lost in a maze of numbers, system, and immense detail so that one can almost die and be forgotten in the enormity of the outlay.

We fancy that nothing has yet been devised to substitute for the so-called personal touch, the stamp of individuality. We heard a bellboy express this about a huge hotel in Chicago when he expressed his disgust at the distance he had to go to dispose of guests. The actual distance this young man traveled each day to arrange for his charges ran well up into the miles, and when one was fixed in his room one had the idea of really having traveled by train or otherwise to arrive at so remote a place from the point one had arranged his reservations.

Whatever comes or goes, then, the first important conclusion in the relation of staff to superintendent and management is to preserve this personal touch. The patient must be the first consideration. He must not be allowed to degenerate into just a case, a study, a mere cog in a machine. The dread so many people have for a hospital is just a fear they will be forgotten. We are told that at Rochester the very heads themselves must be called in to view or review a case that is going from bad to worse. No understudy is delegated with so unwelcome a task. In all deliberations, then, first must come the patient's wellbeing and his comfort as well as his safety. Death must never be regarded as part of the mere routine, but every known and conceivable method must be taken to see that it does not happen. It must always be regarded with regret; its taking place, an event. When death is lightly regarded in a hospital, decay of that institution has already set in

Second, a good understanding must be had about economy. Reckless spending for show and a niggardly thrift are alike to be condemned, and each will cripple considerably the onward progress of a good concern. Costs must be kept down, to be sure, but not at the expense of up-to-date equipment. However, we believe in later years this matter of finance and its forming a difference between directorate and staff has approached the vanishing point. It should be, and is, the business of the management to protect the physician or surgeon who does not by any means equal in case numbers the handsomer figures of his contemporaries. A superintendent can not be blamed for taking more than a casual interest in his renowned surgeons and internists. In more ways than one they make his hospital what it is to the public. Their wishes should certainly at all times have a respectful hearing and for the most part followed, but not at the expense of the smaller man who has his following and who may at any time emerge into the more extended fields.

The superintendent and the staff should combine to make their conferences unusual and helpful, not to say brilliant. In some institutions refreshments are served, and after the regular meeting a commingling of the staff and the superintendent make for informal conferences of more real interest and more mutual understanding than is gained from the regular program. The making of this regular program is, however, a matter of some thought and pains, and it should in every case be as brief as possible, with an artful compression into small compass of only such facts as are important. The droning recital of long histories full of very ordinary

details will always, wherever given, tire the average hearer. So, whenever you have the director and staff together in harmonious conference, it will pretty nearly follow that the hospital is ably managed, because the former meets his directors in conference, later he meets his staff; the logical result is that what one feels the other knows and a complete understanding is had.

The usual staff has its committees—interne, nurse, record, scientific, library, and the like. If they have good men on them, a complete knowledge of all the relations about a hospital will be had and just what is going on will be in the possession of all. A bulletin of some sort sent out to the various members of the staff will give them a complete account of what has been done in conference as well as the reports from the record room, the out-patient, the laboratory, and the deaths and their causes, as well as infections. The ideal conference is where superintendent and staff can meet and feel free to discuss both their sins of omission and commission. This, unfortunately, can not be done as often as desired. Fortunate is the hospital where such an atmosphere holds. It should be the aim of every manager to bring about such a desirable situation, but if he does not the fault is probably not his but is a mistrust existing among members of his staff.

Both staff and director should try to fulfill the requirements of the A. M. A. as to internes and autopsies, and both should work in concert to see these obtained.

So, then, we see that the relationship of staff to superintendent and directorate, like all other great movements in life, is founded on faith. In a big body of men congregated in some activity there will always be some who want to take the short cut—some who are hypocritical by nature—some who feel they are not getting an equal chance—some who must criticize their contemporaries. Medical staffs must suffer all these types along with the rest of the world, we suppose, although we still believe the medical profession, considering the intimate contacts, is less filled with confusion than the others. It is the duty of the medical staff to endeavor to quiet and adjust its own difficulties between members quietly and completely, and never bring them to the superintendent in any manner or form.

A wise superintendent will give his staff the information that he will have none of their professional disputes and jealousies, and that, if they must differ, to do it among themselves, always remembering that these must never reach the point where they will in any manner menace the duty he holds between himself and the patients within his care and protection. Unfortunately, there will exist personal differences between members of a staff. We have never as yet seen a staff where there was not such a condition. We have seen it exist between men of international reputation as well as between the lesser of the less. The observation to be made is that the teachings of the Nazarene have as yet not been completely accepted by all members of the medical profession. Here, again, the superintendent and the directorate have no concern unless such personalities are allowed to interfere with the operation of the hospital, in which case the staff should be requested to set its house in order.

It will be seen, then, that the office of superintendent of a hospital is one of the real jobs of the century. It requires poise, wisdom, and a remarkable faculty of ironing out difficulties daily occurring with great regularity. As things are constituted at present he represents one thing, his medical staff represents another. The successful operation of the hospital depends on the complete accord of the one with the other, with a complete establishment of where the lines of demarcation exist. The one simply has to learn not to interfere with the other. Neither can be autocratic. Neither can assume to know all the other knows. Complications existing peculiar to each one must be settled within that division and not carried to the other to vex the administration of the other. And yet, in the many relations where each must combine with the other by helpful suggestion and carefully considered counsel, the object must be obtained. We believe, in the larger hospitals, this is what happens. In smaller ones, where the manager is harassed by several boards and busybody individuals his position is not to be envied.

This brings us to the final conclusion, and that is that a superintendent must be clothed with full power and authority and be able to arrive at his discussions unhampered by petty interference. Where he must answer to numerous boards and prominent citizens bent on having their way, as in politics, he can not, of course, make much headway. The president of the staff and the advisory board should likewise be unhampered. Good results will necessarily follow.

Some day, in our more enlightened future, college courses will include the degree of "manager of hospitals." Then a young man can take up such a course which will partake of medical and business

and commercial subjects with executive training, and emerge with a degree to back up his administration. Hospitals are daily becoming of such paramount importance that they call for people with an especial adaptability to run them. As matters stand now, it is somewhat of a hit-and-miss affair. The supply of capable men is not equal to the demand. It, therefore, rests with the medical profession as one more of its responsibilities to see that the training and education of hospital superintendents is one of the mort important duties. It would be an original and perhaps a very brilliant move to inaugurate such a course at Morgantown. It might later come to be known in hospital and medical practice as the West Virginia idea and bring us great renown. In any event, let us always remember this one idea in the relation of staff to superintendent and directorate: The patient is the chief consideration.

Pituitary Hormones

For his work in an investigation of the ductless glands, and particularly in his isolation of pituitary hormones, Dr. Oliver Kamm, director of chemical research of Parke, Davis & Company, has been awarded the $1,000 prize by the American Association for the Advancement of Science for the "most noteworthy contribution to science presented at the annual meeting."

Some two thousand scientists delivered addresses at this meeting, which was held in New York. The award was announced on January 2 by Dr. Henry Fairfield Osborn, president of the association.

The isolation of two hormones from the posterior lobe of the pituitary gland, as revealed by Dr. Kamm, is held by chemical scientists to be equal in importance to the isolation of insulin and the discovery of adrenalin.

Dr. Kamm isolated the alpha and beta hormones of the posterior pituitary after twelve years' work in the Parke-Davis Research Laboratories. This, incidentally, is the first time that any one has demonstrated that one gland might contain more than one hormone.

The alpha hormone is the so-called oxytocic principle. The beta hormone is the blood-pressure-raising principle. Dr. Kamm also showed definitely that the beta hormone has the power of controlling the excessive output of water. His paper before the American Association for the Advancement of Science showed that it has been a mistake to refer to the so-called "renal activity" of pituitary extracts. The beta hormone does not act upon the kidneys, but controls the utilization of water by the individual tissues of the body.

The usefulness of this beta hormone is now under investigation in diseases characterized by excessive loss of water, such as diabetes insipidus, burns, cholera, other infectious diseases, and surgical shock. Dr. Kamm points out in his prizewinning paper that much depends upon the ability of the body tissues to retain and utilize water. He said:

"The dangerous symptoms following surgical anesthesia are due mainly to the dehydration of tissues, and the use of beta hormone prevents such desiccation.

"Following extensive body burns, it has been thought that death results from the absorption of toxins. According to the newer view, however, it may be the result of the desiccation of the body tissues. In such cases, if this were proved true, the use of a drug like the beta hormone might possibly save life by favoring the retention of water in the tissues. It is conceivable that something quite startling might flow from this idea in cases of serious burns.

"Water intoxication, with its alarming symptoms leading even to unconsciousness, is very rare. The other extreme, that of water poverty, is rather more common and is characterized by extreme thirst and excessive elimination of water. This condition, known clinically as diabetes insipidus, is relieved at least temporarily by pituitary extract, and it has just been found that the beta hormone possesses this remarkable action.

"Although factors are also involved, it appears that proper hydration is needed for the growth of tissues. In this respect, few of us are absolutely normal. We find that some individuals are extremely sensitive to the action of the beta hormone —they are the 'physiological wets'; while others readily return to normal after administration of the hormone—they are the 'physiological drys.'

"It has just been observed that the fleshy type of individual is almost invariably of the wet type, whereas the slender, scrawny person is usually a dry. The suggestion is therefore made that we have here possibly one of the important explanations as to why the former is fleshy and why the latter fails to gain weight readily in spite of an excessive intake of food and water. It is apparently that the portly person who is desirous of reducing must cut down on his liquid intake, as well as on his intake of solid food. As for the scrawny person, gland therapy may possibly be indicated; but here the work still

is in the investigative stage and conclusions can not be drawn.

"Only a very few grams of highly purified alpha and beta hormones are as yet available. Commercially, they are known as pitocin and pitressin, respectively."

CASE REPORTS

Generalized Lues

Case I.—P. T., white, female, age 20, single, occupation student, entered the hospital December 22, 1928, complaining of pain and swelling of the right "big toe," and aching of the neck. The onset was about three weeks before, following an acute tonsillitis. First noticed a soreness of the right side of the neck. About the same time a small, reddish papule, described as "looking like a boil," appeared on the skin in the region of the left elbow. This spot became so tender that movement of the elbow joint became limited. This subsided after one or two days. Four days later the right knee joint became tender, painful, red, and swollen. The face and eyelids became puffy, urinary symptoms appeared, and patient was told that the kidneys were involved. One week later there appeared a large, reddish papule on the left side of the neck, which improved after a few days. The right knee subsided entirely by the end of 10 days. Toward the end of the second week the big toe of the right foot became tender, painful on active motion, swollen, red, and at this time patient was admitted. Past history is not important, except for frequent sore throat, and quinsy three years ago. Menstrual periods were always regular and without pain. In September, October, and November, 1928, had an amenorrhea, which was unaccounted for in any way. Just prior to admission patient had normal menstrual period. There was no discharge at any time. The cardio-respiratory, gastrointestinal, and genito-urinary systems were negative. Family history negative.

Physical examination: Temperature 98.6°, pulse 88, respiration 22. Skin was negative except for a small, reddish discoloration in the region of the left elbow and on the right side of the neck. Head negative. Eyes: pupils react to light and accommodation. Ears and nose negative. Tonsils greatly enlarged, protruding, and cryptic. Pillars and fauces injected. Sterno-mastoid muscles held tense; and active or passive motion caused pain. Chest and heart negative. Blood-pressure 118-76. Peripheral vessels normal. Abdomen negative, and bimanual examination revealed nothing abnormal. The big toe of the right foot was swollen to about twice its normal size, and was red and somewhat warmer than the opposite toe. It was very tender and painful, but there was no fluctuation. Reflexes present and active.

Laboratory report: Urinalysis: Amber. Acid. Sp. I. 1012; albumen, negative; sugar, I plus. Microscopic negative. Red blood cells, 4,760,000; white blood cells, 5,200; hemoglobin, 86 per cent; polymorphonuclears, 62 per cent; lymphocytes, 30 per cent; endothelial, 8 per cent; blood sugar, III mgs. per 100 c.c.

X-ray of toe: Rarefaction and bony changes in the epiphysis of the first and second metatarsal phalanges. Blood Wasserman, strong 4 plus. This was repeated after a few days with the same results.

Final diagnosis: Generalized lues; luetic bone changes.

Case II.—M. W. N., white, male, age 52, married, occupation clerk, entered the hospital December 16, 1928, complaining of numbness of the extremities and spasm of the left foot. This patient was first seen in this hospital about three years ago, at which time he was brought in after having suddenly lost consciousness and fallen on the street. The only premonitory symptoms then were "black specks before the eyes." Recovered after two or three days and went home. One year ago he had all his teeth extracted, with marked improvement. Present illness began about two or three weeks prior to admission. First noticed that the left leg "went to sleep" quite easily and frequently. While walking, would have the sensation as if his legs were full of needles. This numbness and tingling came on at any time. No other symptoms. Two weeks ago there appeared a clonic spasm of the left foot, more noticeable at night, and sufficiently severe to interfere with rest. It was controlled by pressure of the right leg on the foot. No exciting cause could be determined for this spasm. If uncontrolled the spasm would last just a few minutes, and then subside, only to recur after a short while. Except for an occasional headache and blurring of vision, there were no other symptoms. Past history negative, as are also the cardio-respiratory, gastrointestinal, and genito-urinary systems. A few months ago did notice nocturia, dysuria, burning, and passed a small amount of gross blood. Family history negative, except that one child had "snuffles." Wife has had no miscarriages.

Physical examination: Temperature 97.6°, pulse 80, respiration 18. Patient does not appear acutely ill. Head negative. Pupils react to light and accommodation. Ophthalmoscopic: Media clear, disk well outlined, vessels normal in appearance, no edema or hemorrhages. Tonsils enlarged, protruding, pillars and fauces injected. Few palpable lymph nodes in both anterior triangles of the neck. Chest negative; heart negative. Blood-pressure, 110-80. Moderate sclerosis of the peripheral vessels. Circulation good. Abdomen negative. Rectal examination negative. Reflexes present and active. Negative Babinski and Kernig.

Laboratory report: Urinalysis: Amber. Acid, sp. g. 1.028; albumen and sugar, negative; microscopic negative. Red blood cells, 4,380,000; white blood cells, 10,000; hemoglobin, 86 per cent; polymorponuclears, 64 per cent; lymphocytes, 30 per cent; endothelial, 4 per cent; eosinophiles, 2 per cent; non-protein nitrogen, 38.6 mgs. per 100 c.c.

Glucose tolerance test: Fasting, 95.2 mgs. per 100 c.c.; 1½ hours, 444.4 mgs. per 100 c.c.; 3 hours, 97.5 mgs. per 100 c.c. Blood Wasserman, strong 4 plus.

Final diagnosis: Lues with cerebral manifestations.—R. J. CONDRY, M.D., Davis Memorial Hospital, Elkins, W. Va.

ABSTRACTS

Sugar-Saturated, Vitamin-Starved America

Seale Harris, M.D. (*American Medicine*, Nov., 1928), holds to the opinion that the American people are consuming too much sugar and not enough vitamin. This is a problem of importance which calls for much study as well as education of the laity regarding this particular phase of diet. Sugar products are cheap, abundant and palatable, and have their proper place in correctly adapted diets, affording heat and energy. There is, however, a tendency toward the excessive use of sugar among children. It is estimated that "every man, woman and child in the United States eats on an average one-third pound (about a teacupful) of sugar a day." Other sugar products are used to excess, while many foods containing vitamins are omitted.

The child which is fed too much sugar will not consume other foods containing the factors necessary for satisfactory nutrition. Various infections, gastrointestinal conditions, rickets, and other pathologic conditions result. Many infants are started off on excessive sugar diets and continue such up to and through adult life.

Dr. Harris explains why excessive use of sugar is harmful, and especially points out such danger in infant feeding. The child or adult whose diet consists of excess in sugar does not eat enough vegetables, fruit, milk, and other foods which contain necessary vitamins and minerals. The sugar-fed child is more prone to disease than the one which has a well-balanced diet. Investigation shows that physical resistance is thus greatly lowered and that such individual is predisposed to gastrointestinal disturbances, endocrine dysfunction, various infections, and general untoward conditions resulting from malnutrition.

Due to lack of the proper vitamins, dental caries, pyorrhea, and mouth and throat diseases are frequent. The remedy lies in education of the laity as to the danger of too much sugar for the child as well as the adult. Certain "soft drinks" are dangerous, because of high sugar content and other undesirable elements. A "normal person from childhood to old age should drink from a pint to a quart of milk and eat one raw fruit, one raw vegetable, and two cooked leafy green vegetables each day." Other foods may then be used to complete a well-balanced diet.

Liquor Cerebrospinalis

Mettenheim, H. v. ("On the Liquor Cerebrospinalis and the Encephalogram in Childhood):

The cerebrospinal fluid is to be held as (*a*) an ultrafiltration of the blood, (*b*) a specific product of secretion of the brain, especially of the choroid plexus.

There is normally some, but not a constant, relation between the composition of the liquor and the blood. This is changed and disturbed in diseases.

The fact that the composition of the liquor differs at different levels of the axis of the cerebrospinal system, both in health and in disease, renders necessary a fractionated puncture for diagnostic purposes.

The relation between the liquor and the blood is disturbed: (1) By changes in the composition of the blood, and (2) by change in the permeability of the hemato-cerebral barrier, especially of the plexus, but also of the general surface of the central nervous system.

Permeability of the barrier may be brought forth by (*a*) bacteriological irritation, (*b*) by chemical irritation, and (*c*) by mechanical-physical irritation.

From the brain the fluid flows off through (1)

the venous, (2) the lymphatic system, and (3) through the sheaths of the cerebral and spinal nerves.

From the spinal canal the flowing off by the venous plexus is not so quickly possible.

The pressure of the cisterna is positive in the new-born as well as in infants under pathological circumstances. In infancy the liquor is easier to obtain by cisternal than by lumbar puncture. A spinal pressure of 6 mm. seems to be pathological.

In the new-born there is occasionally no fluid obtainable at all. The pressure may be increased by pumping movements of the head of the child by change of position of the body, by compression of the vessels of the neck, or by cooling of the skin.

The relation of blood sugar to the sugar in the fluid is not a constant one. In epidemic encephalitis, tetanus, acidosis, and in many cases of nephritis, the sugar content of the fluid is positive or increased.

In tuberculosis the sugar is decreased or negative. In encephalitis the high sugar content is probably due to direct irritation of the sugar center by the specific virus.

In the new-born the fluid is usually of a yellowish color. The reaction of the blood and bilirubin is always negative.

After injury of the venous plexus by the needle, birth injuries, pachymeningitis, thrombosis of the sinus, or tumor, the fluid is sanguinolent.

In tuberculosis, acute encephalitis meningitis and epidemic encephalitis, pellicle is found.

In purulent meningitis the fluid is turbid. In tubercular meningitis, serosa hydrocephalica chronica and acute encephalitis, the fluid is clear, slightly cloudy, or opalescent.

Cytological Examination.—(*a*) Quantitative; 5 normal.

Pleocytosis is found in all inflammations of the central nervous system. It is also found more often during the first two years of life. The cell count is increased in tuberculous meningitis and decreased in acute epidemic encephalitis.

(*b*) Qualitative: normal lymphocytes.

Pleocytosis: (1) Lymphocytosis is found in lues, encephalitis, and sometimes in meningitis serosa infectiosa.

(2) Leukocytes in all purulent meningitis.

(3) Mixed pleocytosis in the beginning of tubercular meningitis and after irritation of the meninges by repeated punctures at short intervals.

The appearance and prevalence of lymphocytes in chronic infectious diseases with their lipoid virus, of leukocytes in purulent meningitis, depends on the degree of intensity of irritation; a slight irritation brings about lymphocytosis, a greater irritation leukocytosis.

Great caution is advised in judging the röntgenograms of normal, hydrocephalic and porencephalic brains, as there is often great difficulty in explaining the pictures.—*International Clinics*, Dec., 1927.

TUBERCULOSIS ABSTRACTS

Employment of Tuberculosis Patients in England

Conditions responsible for unemployment among the able-bodied members of a population are still more acutely reflected among the tuberculous workers. Fortunately, "it is a general experience that, whether trade conditions be good or bad, the consumptive worker who leaves his job to undergo treatment returns to it if he makes a good recovery." The working capacity of the chronic case of tuberculosis is seldom more than 50 per cent of that of a normal worker and his labor is more unreliable because steady work can not be maintained by him.

The advice to secure work in the open air, often arduous and exposed to all weather, is usually fallacious. An occupation that is free from worry and provides a good wage is far better. The best occupation for a tuberculous person is the one to which he is accustomed and at which he can earn a good income, provided it can be carried out under reasonable hygienic conditions.

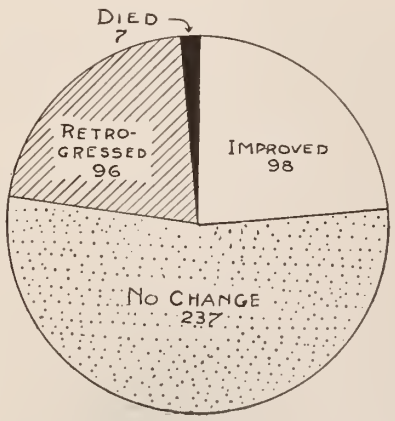
Case committees have endeavored to fit arrested cases for employment and to secure positions for them. Their task has been difficult, involving not only the training and placement of ex-patients but also the persuasion of the employer and fellow employees that no danger is incurred in employing an arrested case of tuberculosis. Precise conditions of employment of tuberculous persons can not be laid down, as their capacity varies greatly. Light work in parks and gardens has been found most suitable. Absences from work of a month or more are not uncommon. In Leeds, there is a "Shop-in-the-Fields," equipped to cut firewood, to do general house repairs, and to make brushes. Workers are also sent out on call to clean windows. During the first two years, the enterprise was run at a loss, but a small profit was made in the third year. In the Spero workshops in London, fancy leather goods

were manufactured. Difficulty was met in marketing the product, and it has been necessary to subsidize the venture. From the standpoint of improving the health and morale of the workers, this experiment has, however, been a decided success. Many other experiments of a similar nature are also described.—*Employment of Tuberculous Patients*, Report by the Medical Officer of Health (London), January, 1928.

Employment of the Tuberculous in New York

The New York Tuberculosis and Health Association in 1923 undertook a three-year experiment in supervising the employment and medical follow-up of quiescent and arrested cases of tuberculosis. The Reco Shop, a training school for tuberculous ex-service men, conducted in coöperation with the Federal Government, offered training in jewelry making, watch repairing, and cabinet work, but was finally, for good reasons, abandoned. The Altro Shop, a model garment factory for the tuberculous, while limited in scope, has been very successful and serves a very useful purpose.

Some conclusions, based on a careful analysis of cases, medical, social, and economic, are that, while the group is largely composed of poorly paid and untrained workers, it is surprisingly self-supporting.



Progress of 431 tuberculosis patients under Vocational Service of New York Tuberculosis and Health Association between initial and final examination. Based on extent of lesion and clinical symptoms.

Eighty-two per cent earned a fairly good employment record. Excluding the cases diagnosed as non-tuberculous, 40 per cent were classed as incipient, 50 per cent as second-stage, and 10 per cent as far advanced. Medical studies made of 431 workers at the time of employment and again on discharge, based on the area of the lesion, showed that in 346 the diagnosis remained the same, in 28 the lesion decreased, and in 57 it increased. A similar tabulation, based on "condition," showed 279 unchanged, 86 improved, and 66 worse.

A summary of the conclusions is as follows:

Indications are that a medically supervised vocational and employment service for tuberculous ex-patients will help materially in carrying through a recovery already started, and will help to reduce the relapse rate.

Such a service may be run more economically in connection with similar service for other types of handicapped persons, and will suffer no loss from such combination provided it be given expert supervision by physicians familiar with tuberculosis.

To be effective, such a service should have the benefit of family case work service, either within the organization or through close coöperation with family agencies.

For the large majority of patients who are unable to return immediately to full-time work, some special provision in part-time shops should be made.

Industrial training in skilled trades for the tuberculous has not proven possible from the vocational point of view for psychological and economic reasons. The problem of inducing the patient to take suitable work could be greatly facilitated by adequate and continuous vocational counseling in the sanatorium.

It is not feasible to list trades and jobs which are suitable for the tuberculous, but rather to list the factors to be avoided and sought in selecting work for them.—*Employment of the Tuberculous*, Alice Campbell Klein and Grant Thorburn, M.D., New York Tuberculosis and Health Association, 1928.

Grading the Work Capacity of Tuberculous Patients

Godias J. Drolet, in coöperation with the Committee on After-Care and Social Reëstablishment of the National Tuberculosis Association, has proposed a classification of the work capacity of tuberculosis patients, based on the condition and stage of the disease, previous work, history, working conditions, and other factors, all of which have been carefully defined. Definitions and classification are printed on a card convenient for reference. Copies may be obtained from the state tuberculosis association or the National Tuberculosis Association.

THE WEST VIRGINIA MEDICAL JOURNAL

JAMES R. BLOSS, *Editor-in-Chief* - - - - - - - - - Huntington

...ASSOCIATE EDITORS...

J. HOWARD ANDERSON, Marytown — WALTER E. VEST, Huntington — C. A. RAY, Charleston — HARRY M. HALL, Wheeling

THE JOURNAL issued on the first of each month. Entered as second-class matter January 1, 1926. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917. Authorized July 24, 1919.

Subscription to Members ..... $2.00 Per Year
Subscription to Non-Members ..... $3.50 Per Year
Single Copies ..... 50 Cents

OFFICERS

President:
H. M. HALL ..... Wheeling

First Vice-President:
B. F. BONE ..... Moundsville

Second Vice-President:
W. C. SWANN ..... Huntington

Third Vice-President:
J. A. DUFF ..... Martinsburg

Executive Secretary:
MR. JOE W. SAVAGE ..... Charleston

Treasurer:
T. MAXFIELD BARBER ..... Charleston

Delegates to A. M. A.:
JAMES R. BLOSS (1928-29) ..... Huntington
HENRI P. LINZ (1928) ..... Wheeling

Alternates:
A. A. SHAWKEY (1928-29) ..... Charleston
HARRY M. HALL (1928) ..... Wheeling

COUNCILLORS

Chairman of the Council for 1928:
R. H. DUNN ..... South Charleston

First District:
C. W. WADDELL (2-year term) ..... Fairmont
C. G. MORGAN (1-year term) ..... Moundsville

Second District:
C. H. MAXWELL (2-year term) ..... Morgantown
C. H. HALL (1-year term) ..... Elkins

Third District:
JOHN FOLK (2-year term) ..... Bridgeport
J. D. COLE (1-year term) ..... Clarksburg

Fourth District:
ROY BEN MILLER (2-year term) ..... Parkersburg
W. E. VEST (1-year term) ..... Huntington

Fifth District:
J. HOWARD ANDERSON (2-year term) ..... Marytown
H. G. STEELE (1-year term ..... Bluefield

Sixth District:
R. H. DUNN (2-year term) ..... South Charleston
H. A. WALKUP (1-year term) ..... Mt. Hope

¶ All original articles for THE JOURNAL must be made to it exclusively. Communications and items of general interest to the profession are invited from all parts of the state. Notices of deaths, removals from the state, changes of location, etc., are requested.

¶ Our readers are requested to send marked copies of local newspapers containing matters of interest to members of the medical profession. Name of sender should be given.

CONTRIBUTIONS TYPEWRITTEN

¶ Contract with present printer specifies all articles, communications, etc., MUST BE TYPED.

ADVERTISEMENTS

¶ Advertising forms will go to press not later than the tenth of each month. All advertisements must conform to the standard established by the Council of Pharmacy and Chemistry of the A. M. A.

WOMAN'S AUXILIARY

Mrs. R. V. Shanklin, Gary, President; Mrs. T. H. Harris, Parkersburg, vice-president; Mrs. W. C. Swann, Huntington, secretary; Mrs. W. D. Simmons, Slab Fork, treasurer.

Councillors

Mrs. C. G. Morgan, Moundsville, first district; Mrs. Ralph Maxwell, Morgantown, second district; Mrs. H. D. Price, Parkersburg, third district; Mrs. J. R. Bloss, Huntington, fourth district; Mrs. A. G. Rutherford, Welch, fifth district; Mrs. E. S. DePuy, Beckley, sixth district.

Delegates to Woman's Auxiliary of A. M. A.

Mrs. R. V. Shanklin, Gary; Mrs. B. S. Preston, Charleston. Alternates — Mrs. George Jeffers, Parkersburg; Mrs. W. B. Scherr, Morgantown.

STANDING COMMITTEES

Medical Defense Committee

C. G. Morgan, Moundsville, Chairman; H. A. Walkup, Mt. Hope; H. G. Steele, Bluefield.

Committee on Scientific Work

O. B. Biern, Huntington, chairman; G. H. Barksdale, Charleston; A. G. Rutherford, Welch.

Public Policy and Legislative Committee

R. A. Ireland, Charleston, chairman; R. H. Walker, Charleston; James McClung, Richwood; C. R. Ogden, Clarksburg, D. A. MacGregor, Wheeling.

Committee on Medical Education

John N. Simpson, Morgantown, chairman; W. T. Henshaw, Charleston; W. S. Fulton, Wheeling.

Committee on Professional Relations

John R. Shultz, Charleston, chairman, (5-year term); A. G. Rutherford, Welch, (2-year term); W. R. Goff, Parkersburg, (2-year term); Hugh G. Nicholson, Charleston, (3-year term); E. P. Smith, Fairmont, (4-year term)

Workman's Compensation Committee

W. A. MacMillan, Charleston, chairman; C. A. Ray, Charleston; John E. Cannaday, Charleston.

Committee on Public Health

David Littlejohn, Charleston, chairman; John Thames, Charleston; Will McLain, Wheeling.

Surgical Section

Robert King Buford, Charleston, chairman; B. I. Golden, Elkins.

Eye, Ear, Nose and Throat Section

I. D. Cole, Clarksburg, chairman; C. C. Jarvis, Clarksburg.

Hospital Association Officers

R. A. Ireland, Charleston, president; J. S. Turk, Wheeling, president-elect; B. I. Golden, Elkins, first vice-president; W. E. Vest, Huntington, second vice-president; Mr. Joe W. Savage, Charleston, secretary-treasurer.

PRESIDENT'S PAGE

ONE of the characteristics of American life is to protest about many and varied real and fancied wrongs. So much do we do this that the word "kick" is one of the overworked saturnalia of our vocabulary. Throughout the last two years must has been heard of at the various medical meetings of this and that injustice; anachronisms in the Workmen's Compensation Act; wide (and they certainly ar wide) discrepancies betwixt what is required of us and what the irregulars must attain ere they essay to work upon the morbid and the ill, and numerous other buffetings of fate.

Now it is quite evident that desultory discussion in this group or that group, carried on with no set purpose, no organization, no fixed point of attainment, is really worse than useless, for silence often means something, but sporadic protest or intermittent criticism makes a certain kind of mind really feel it is doing something when, of course, it is quite a wastage on the well-known desert air. The only time to do something is in that period when the legislature meets. That time is here and now. It will not do to "kick" next summer nor protest next winter. In a few weeks, beginning this very hour, what is to be done must be done. The idea of lobbies is repugnant to most of us. Yet in our daily work we know only too well we have to take human nature as we find it. Who compromises against His will and judgment more often than you and we? So we must take a legislature as we find it. In it are men who see things perhaps better than we, but they, like us, must compromise with purveyors of ballyhoo in order to get things across at all. The writer, speaking personally for himself alone, advocates watching carefully the performances of members of the legislature. If your legislator persistently ignores the medical profession and matters of health, does not see the use of a new medical school and can not distinguish between the work we are doing and what charlatans are performing, make note of all he does and how he behaves, and then bring it out in the open when he runs again in the next primary or aspires to any other office.

The medical profession is the most powerful organ of its kind in existence and, strange to say, it is only beginning to learn of its prowess. It is truly a sleeping giant. We have, in Ohio county, evidence of its sleeping. Had it been a little more awake it would have accomplished what it merely, in a nebulous way, thought. As it was, it wrought a pronounced havoc which required a recount. This is not said in a spirit of vanity nor as an intimidation, but it is said nevertheless with a grim, determination. Several of the most astute politicians we know are medical men. Call them what you like, their political power is enormous. So it is time we do less begging, less supplicating; less of Lazarus waiting for a few crumbs from the legislative table. We want to be fair. Nothing we have ever asked for turned out badly for any community. The same can not be said for some other callings. Communities are crying for doctors all over the United States. West Virginia is no exception. If some self-satisfied legislators blatantly decry the medical profession, thwart its efforts and make it difficult for it to carry out its legislative program, then upon their heads—and theirs alone—can rest a high mortality that exists hereafter, anywhere in this state where a lack of doctors is the deplorable fact.

Harry M Hall

EDITORIALS

Powwow Doctors

The witchcraft flareup at York, Pennsylvania, which resulted in a nationally featured trial of three of the voodoo practitioners, is particularly interesting to the doctors of medicine because of the differentiation made during the trial between insanity and hallucinations. Judge Ray P. Sherwood, presiding at the trial of John H. Blymyer, spellcaster extraordinary, for the murder of Nelson D. Rehmeyer, ruled that "delusions do not constitute legal insanity."

Just what influence the ruling of Judge Sherwood will have on future sanity hearings can not be foretold until future sanity hearings are placed upon the legal stage, but the question involved is of interest to the medical man because of the widespread publicity that almost invariably accompanies scientific testimony in trials involving man's mental state. At any rate, it is well for every practitioner of medicine to know that, "legally," delusions and insanity are two separate and distinct items.

The *Literary Digest*, in connection with the witchcraft scare, has given the public some interesting cures as practiced by the powwow doctors in and around the city of York. For instance, in the case of local inflammation, burns, and gangrene, the words "*Sanctus storius res*, call rest," should be repeated by the powwow doctor in a low tone over the patient. To cure warts, all that is necessary is to roast chicken's feet and rub the warts with them, afterwards burying the chicken's feet under the eaves.

Now, what about the "blue cough"? To quote from the *Literary Digest*, "Cut off three little locks of hair from the crown of a child which has not seen its father in its lifetime; hang it about the child which has the blue cough, in a piece of unbleached cloth. The thread with which it is tied must be unbleached. Or: Stick the child which has the blue cough three times through a blackberry bush without washing (the child), and you must mind to put it through the same way all three times, *i.e.*, from the same side of the bush you did the first time."

It has been estimated that one-half of the 60,000 residents of York believe in witchcraft. In casting about for a reason for the fetish, one is attracted to Exodus 22: 18, wherein it is written, "Thou shalt not suffer a witch to life." In the hands of an ignorant expounder, this law has apparently been at work upon weak imaginations. It was the shibboleth of the Massachusetts and Connecticut witch-burners.

According to a recent editorial in the Charleston *Gazette*, "the remedy is education that reaches into the home. . . . The sanitarium and the asylum, and not the rope nor the penitentiary, are the "penalties" to be used. It is no time for hatred and revenge to be indulged when civilization is confronted with its own clumsiness or neglect."

An Apology

Between the first and the thirteenth day of December, 1928, the contract for printing the WEST VIRGINIA MEDICAL JOURNAL was changed on two different occasions. These changes were necessitated by unforeseen circumstances, and it was with considerable reluctance that the JOURNAL's mechanical equipment was carted about from pillar to post for thirteen days. On December 13, the matter of printing the JOURNAL was finally settled and only fourteen working days were left in which to catch the United States mail by the first of January.

It was during these fourteen days that the JOURNAL was increased from 80 to 96 pages, that the type face was changed, and that the general make-up was rearranged. Because of this limited time in which to work, a number of minor errors appeared in the January JOURNAL. In this apology, the JOURNAL humbly offers the above explanation.

Cost of Medical Care

Questionnaires have recently been mailed out to many doctors in West Virginia by the American Medical Association, seeking information on "The Capital Investment in Medicine." An important group of economists, publicists and physicians has undertaken to make an investigation of the cost of medical care, the results of which are expected to be of great importance to the medical profession. The American Medical Association is endeavoring to collect information pertaining to the capital investment in medicine and the income from medical practice, in order to assist in the movement.

The A. M. A. has sent the questionnaires mentioned above to more than 25,000 physicians, selected at random, for information pertaining to invested capital involved in physicians' education, interne training, postgraduate courses, office and traveling equipment, office maintenance, medical society affiliations, library maintenance, and medical licensure fees. All of the questionnaires are anonymous and there need be no fear of any embarrass-

ing or undesirable results from the information returned.

Because this is a survey of the profession, by the profession and for the profession, every member of the West Virginia State Medical Association who receives such a questionnaire is urged to fill it out promptly and to return it to the American Medical Association.

Scientific Papers

A new method of stimulating interest in the preparation of scientific papers has been inaugurated in the Fayette County Medical Society by Dr. William R. Laird, of the Coal Valley Hospital, Montgomery, who has offered a silver cup to the doctor who presents the best scientific essay before the Fayette society in 1929. The cup was offered by Dr. Laird in memory of his father, Dr. J. M. Laird, who was one of the charter members of the Fayette organization.

The cup will remain as the permanent property of the society, but each year will be engraved with the name of the doctor who presents the best scientific paper. All of the papers will be sent in for publication in the WEST VIRGINIA MEDICAL JOURNAL, and the publication board of the JOURNAL have been asked to serve as judges.

The cup offered by Dr. Laird bids fair to bring about some keen competition in the preparation of scientific papers by the members of the Fayette society, and to possibly open up new sources of material.

OBITUARY

A. B. Littlepage, M.D.

Dr. Alexander B. Littlepage, aged 74, died at his home in Charleston on December 30, following an attack of influenza from which he had apparently recovered. He was graduated from the Ohio Medical College and practiced his profession in Kanawha county for more than forty years. For the past few years he had been in comparative retirement.

Dr. Littlepage is survived by his wife and five daughters. He was a brother to the late Adam B. Littlepage, former Congressman and at one time a democratic candidate for governor of West Virginia.

Frank E. Bunts, M.D.

Dr. Frank E. Bunts, whose article on "Clinical Prognosis in Cancer of the Breast" appeared in the January issue of THE WEST VIRGINIA MEDICAL JOURNAL, was stricken with heart disease and died very suddenly on November 28, 1928.

Dr. Bunts was one of the outstanding surgeons of Cleveland and was also one of its most valued and beloved citizens. He was born in Youngstown, Ohio, but most of his life was spent in Cleveland. He was graduated from the United States Naval Academy in 1881, and in 1886 from the Medical College of Western Reserve University. From that time, with the exception of periods of study at foreign clinics and of service with the army in the war with Spain and in the World War, his time was devoted to the practice of surgery in Cleveland, where for 35 years he had been professor of the principles of surgery and clinical surgery in the medical school of Western Reserve University. He was the first president of its Medical Academy, and was president of the Cleveland Medical Library Association in 1927.

Dr. Bunts was associated with St. Vincent's Charity Hospital for 42 years, first as interne, and for the last fifteen years as visiting surgeon and chief of staff. He was also visiting surgeon to many of the other hospitals in the city.

A. Murat Willis, M.D.

Dr. A. Murat Willis, nationally known surgeon of Richmond, Va., died from a self-inflicted bullet wound on January 3, 1929, at the Johnson-Willis Hospital, Richmond, of which institution he was president. The shooting occurred in the surgeon's private office, where he went immediately after performing an operation. Associates of Dr. Willis were unanimous in saying that continued excitement incident to a controversy over the affairs of the University of Virginia had weakened his highly sensitive nervous system.

Dr. Willis was born in Greene county, Alabama, on December 10, 1878, and received his early education in Mobile. In 1900 he enrolled in the Medical College of Virginia and was graduated in 1904. He did postgraduate work at Harvard in 1906, and, the next year, became associated with Dr. George Ben Johnson as his assistant at the Memorial Hospital, Richmond. In 1909 Drs. Johnson and Willis founded the Johnson-Willis Hospital, and after Dr. Johnson's death in 1916 Dr. Willis became president of the institution.

Dr. Willis was a member of the American Medical Association, Southern Surgical Association, the Surgical Research Society, the American College of Surgeons, Richmond Academy of Medicine and

Surgery, the Southern Medical Association, and the Tri-State Medical Society. He devoted almost a quarter of a century of unpaid service to the Medical College of Virginia, where he served, until recently, as professor of surgery.

COUNTY SOCIETY NEWS

Central Tri-State

One of the most successful and beneficial meetings ever held by the Central Tri-State Medical Society took place at the Prichard Hotel, Huntington, on the afternoon and evening of January 24. A banquet was served to the members in attendance between the afternoon and evening sessions, and the banquet was followed by a short business session. Dr. William R. Laird, of Montgomery, newly elected president of the Tri-State society, presided at the January 24 meeting.

The afternoon program was opened by Dr. L. E. Phaneuf, professor of gynecology of Tufts Medical College, Boston, who read a splendid paper on "Perineal Lacerations and Their Treatment." Dr. Phaneuf was followed by Dr. Russell Cecil, of the Cornell Medical College, whose paper embraced the subject, "The Etiology of Chronic Arthritis." Dr. Cecil is the author of Cecil's *Practice of Medicine*. Dr. Leo Buerger, of New York City, designer of the Brown-Buerger cystoscope, concluded the afternoon session with an interesting paper on "Circulatory Disturbances of the Extremities."

Dr. Ralph I. Lloyd, of Brooklyn, N. Y., was the essayist for the evening meeting, and presente an illustrated lecture on "Rare and Unusual Eye Cases." The paper was of great interest both the eye specialist and to the general practitioner.

JAMES S. KLUMPP, Secretary.

Kanawha County

The annual installation of officers of the Kanawha Medical Society was held in the auditorium of the Public Library building on the evening of January 15, with thirty-five members present. The new officials who took office were: Dr. R. H. Walker, president; Dr. E. Bennette Henson, vice-president, and Dr. Russel Kessel, secretary-treasurer. In the absence of Dr. W. W. Point, retiring president, the meeting was called to order by Dr. C. A. Ray, with Dr. J. R. Shultz acting as secretary.

The first paper of the evening was presented by Mr. J. V. Battram, of the Charleston Retail Credit Association. Mr. Battram gave a very interesting talk on the subject of retail credit and its benefits to the medical profession. Upon motion of Dr. W. W. Point, a committee was appointed, consisting of Dr. Point, Dr. Ray Kessel, and Dr. R. H. Dunn, to confer with Mr. Battram further in regard to the business suggestions made in his talk. A motion made by Dr. R. H. Barksdale was passed to devote one meeting of the society each year to the subject of business and its relation to the practice of medicine.

Dr. R. H. Walker then presented an excellent paper on "The Benefit of a Local Medical Society," which contained many worth-while suggestions. The scientific paper of the evening was presented by Dr. T. W. Nale, and consisted of a case report from the Charleston General Hospital on "Pregnancy Complicated with Burns." The paper was well prepared and delivered and was ably discussed by Dr. E. B. Henson, Dr. Ray, and Dr. Point.

Following the consideration of a few business matters, the society adjourned, to meet again on February 5, 1929.

RUSSEL KESSEL, Secretary.

Harrison County

The regular monthly meeting of the Harrison County Medical Society was held at St. Mary's Hospital, Clarksburg, on Thursday evening, January 3. Dr. A. J. Kemper, of Lost Creek, retiring president, spoke briefly but eloquently and then turned the gavel over to Dr. Frank V. Langfitt, who also made a few remarks very suitable to the occasion.

The scientific paper of the evening was presented by Dr. Arthur S. Jones, of Huntington, upon the subject, "Tuberculosis of Joints and Bones." His most excellent essay was illustrated with lantern slides. Dr. J. O. Rankin, of Wheeling, opened the discussion and likewise showed some interesting lantern slides. Dr. J. E. Wilson, of Clarksburg, also discussed the paper. It was regretted very much that Dr. Jones had to leave early in order to catch his train, and was, therefore, unable to close the discussion.

At this meeting, Dr. J. R. Carter, of Salem, and Dr. R. S. Coffindaffer, of Shinnston, were elected to membership in the society.

B. S. BRAKE, Secretary.

Fayette County

The Fayette County Medical Society met at the Hill Hotel, Oak Hill, Tuesday, January 8, 1929,

at 8:00 P. M. Following the installation of new officers, Dr. M. C. Borman, of Montgomery, as president, and Dr. H. A. Walkup as secretary, Dr. Walkup read a paper on "Prevention of Heart Disease." Dr. Borman outlined the prospective policies for the new year. The announcement of the presentation, by Dr. William R. Laird, Montgomery, of a silver loving cup to the society in memory of Dr. J. M. Laird, one of the founders of the society, was made. The cup is to be engraved each year with the name of the member of the society who reads the best paper before the society during the year.

H. A. WALKUP, Secretary.

Ohio County

Dr. A. Graeme Mitchell, professor of pediatrics of the College of Medicine, University of Cincinnati, was the scientific essayist at the January 18 meeting of the Ohio County Medical Society, which was held at the Wheeling Elks' Club. Dr. Mitchell presented a most interesting paper on the subject, "Pediatric Indications for Tonsillectomy." His paper was discussed by Dr. Ivan Fawcett and Dr. J. R. McClung, of Wheeling.

Dr. W. H. McClain, Ohio county health officer, has been reappointed to serve during the new administration. Dr. McClain bears the unique distinction of being the only county employee reappointed to office by the Ohio county court on January 1, 1929.

H. W. BOND, Secretary.

Central West Virginia

The annual winter meeting of the Central West Virginia Medical Society was held at Gassaway on the evening of January 16, with Dr. C. C. Carson in charge of the program and arrangements. This meeting was presided over by the new president, Dr. S. P. Allen, of Webster Springs. The scientific program was presented by Dr. T. M. Barber and Dr. E. Bennette Henson, of Charleston. Dr. Barber gave a very interesting paper on "Some of the Newer Aspects of Rickets," and Dr. Henson talked on "Surgery of Trauma," with some excellent lantern slides. Both papers were extensively discussed by the members present.

Other talks were made by Dr. J. C. McNeil, of Sutton, dental surgeon, and by Mr. Joe W. Savage, executive secretary of the West Virginia State Medical Association, who made his official visit to the society. The next meeting will be held on Wednesday evening, April 10, at Richwood, with Dr. James R. McClung in charge of the program. Members of Dr. McClung's committee, appointed by Dr. Allen, are Dr. J. T. Graham and Dr. W. E. Echols, both of Richwood.

Those present at the Gassaway meeting included Dr. Henson and Dr. Barber, of Charleston; Mr. Savage; Dr. S. P. Allen, of Webster Springs; Dr. M. T. Morrison, of Sutton; Dr. J. C. McNeil, of Sutton; Dr. G. O. Brown, of Buckhannon; Dr. C. C. Carson, of Gassaway; Dr. C. C. Denham, of Buckhannon; Dr. S. S. Hall, of Buckhannon; Dr. O. O. Eakle, of Sutton; Mrs. C. C. Carson, Mrs. O. O. Eakle, and Mrs. J. C. Kenton, of Gassaway.

Following adjournment, a delightful buffet luncheon was served by the ladies who were present.

S. S. HALL, Secretary.

Marshall County

The Marshall County Medical Society met in regular session at the Marshall county court house on the evening of January 15 and a very interesting program was presented. The main feature of this program was a talk by Dr. L. M. Robinson, warden of the West Virginia penitentiary. The subject of his talk was "The Mental and Physical Element in Crime." This paper was very interesting and was greatly appreciated by the members present.

Newly elected officers of the Marshall County Medical Society, who were selected at the December, 1928, meeting, are: Dr. B. F. Bone, president; Dr. J. E. Arnold, vice-president; Dr. D. B. Ealy, secretary, and Dr. O. P. Wilson, treasurer. Dr. R. A. Ashworth was named on the board of censors, and Dr. J. C. Peck, Dr. J. H. Luikart, and Dr. D. B. Ealy were elected delegates to the state meeting at Martinsburg next May. Alternates named were Dr. C. S. Fortney and Dr. Mary Fortney, both of Hundred.

D. B. EALY, Secretary.

Cabell County

Dr. Oscar B. Biern, of Huntington, was elected president of the Cabell County Medical Society for 1929 at the regular monthly meeting held at the Hotel Prichard on December 13. Dr. Biern has succeeded Dr. H. D. Hatfield, who served during the past year.

Other officers named at the December 13 meeting were: Dr. W. C. Swann, vice-president; Dr.

R. M. Sloan, secretary; Dr. Ray M. Bobbitt, treasurer. Delegates to the state meeting at Martinsburg will be Dr. J. A. Guthrie, Dr. W. C. Swann, Dr. O. B. Biern, and Dr. Sloan. Alternates will be Dr. James S. Klumpp, Dr. R. J. Wilkinson, Dr. R. Stuart VanMetre, and Dr. C. B. Wright. Dr. J. H. Steenbergen was elected to the board of censors.

The scientific paper of the evening was presented by Dr. A. H. Hoge, of Bluefield, on "Hypothyroidism." The paper was accompanied with lantern slides and was fully discussed by a number of the members present.

One new member, Dr. C. O. Reynolds, of Huntington, was admitted to membership in the society at this meeting.

I. I. HIRSCHMAN, Secretary.

Barbour-Randolph-Tucker

Dr. C. B. Williams, of Philippi, was elected president of the Barbour-Randolph-Tucker Medical Society at the quarterly meeting held at Elkins on the evening of January 22. Dr. C. H. Hall, of Elkins, and Dr. W. E. Whiteside, of Parsons, were named as vice-presidents, and Dr. J. C. Irons, of Horton, as secretary-treasurer. Dr. F. K. Lyons, of Parsons, was named on the board of censors. Delegates to the state meeting will be Dr. Owens and Dr. Irons, with Dr. W. E. Whiteside as alternate.

The Elkins meeting was preceded by a banquet at the Tygart Hotel, with eighteen members present. The speaker of the evening was Dr. Harry M. Hall, of Wheeling, president of the West Virginia State Medical Association, who read an excellent paper on "The Place of the County Society." Mr. Joe W. Savage, executive secretary of the state association, was also present and made a short talk upon the affairs of the association.

Four doctors were admitted to membership in the Barbour-Randolph-Tucker society at the January 22 meeting. They were Dr. R. J. Condry, of Elkins; Dr. D. C. Gordon, of Elkins; Dr. Joseph L. Miller, of Horton, and Dr. C. T. Upchurch, of Galloway.

Upon motion, duly seconded, it was decided to hold a meeting of the society every two months, instead of quarterly. The next meeting will be held at Elkins in February. The meeting was presided over by Dr. W. E. Whiteside, of Parsons, retiring president.

J. C. IRONS, Secretary.

ANNOUNCEMENTS

American College of Physicians

The thirteenth annual clinical session of the American College of Physicians will be held in Boston, Mass., on April 8-12, inclusive, with headquarters at the Hotel Statler. A preliminary program for this meeting has recently been released, setting forth the scope of the session, special features, assembly topics, program of clinics, and railway fares. Dr. John H. Means, of Boston, is the general chairman in charge of all arrangements.

American Goiter Association

The annual meeting of the American Association for the Study of Goiter will be held at Dayton, Ohio, on March 25-27, inclusive. The object of the organization is to bring together each year men who are especially interested in the study of goiter and its associated problems. Members of state and provincial medical societies are eligible to attend.

The first day of the Dayton meeting will be given over to diagnostic clinics in the morning and several short papers during the afternoon, chiefly concerned with recent experimental work. On the second day, operative clinics will be held at the Miami Valley Hospital, St. Elizabeth's Hospital, and at the Soldiers' Home Hospital. The afternoon of the second day and the morning and afternoon of the third day will be given over to the presentation and discussion of scientific papers.

Founder's Day

Dr. Joseph L. Miller, donor of a rare collection of medical books to the Richmond Academy of Medicine, will speak on "Physicians of the Old South, Their Character and Education," on founder's day at the Medical College of Virginia, February 15, 1929. On the same occasion Dr. Charles R. Robins, professor of gynecology at the Medical College of Virginia, will read a paper on the beginnings in nursing education in the modern sense at the Medical College of Virginia.

Formal Opening

Cabaniss Hall, the new dormitory for women, chiefly of the school of nursing, at the Medical College of Virginia, will be formally opened on founder's day, February 15, 1929. This building accommodates 134 persons, one-half in single and one-half in double rooms, with hot and cold water in each room. Certain recreational and teaching

facilities, as well as a large dining room, kitchen, and ice-making plant, are provided in this building.

Course on Neurology

Special systematic classes for postgraduate study in neurology and psychiatry will be held in English at Prof. Wagner von Jauregg's Neurophychiatric Clinic and at the Neurological Institute of Prof. Marburg, Vienna University, Austria, from May 21 to June 29, 1929. These classes are being held under the auspices of the American Medical Association of Vienna. During the six weeks of study, the whole sphere of neurology and psychiatry and the adjacent branches of otiatry, ophthalmology, and x-ray will be covered.

Dr. Scherer's Clinic

Dr. Scherer's New Highland Sanitarium and Clinic of Martinsville, Indiana, has just announced the completion and opening of a new five-story, fireproof building on February 16. This addition has rendered Dr. Scherer's clinic one of the largest and best equipped in the middle west. Dr. Simon P. Scherer, president of the institution, has provided everything necessary for the diagnosis and treatment of chronic conditions.

Dr. Scherer has extended a cordial invitation to all members of the profession in West Virginia to visit his sanitarium and clinic whenever they happen to be traveling in Indiana.

BOOK REVIEWS

McClanahan's Pediatrics

Pediatrics for the General Practitioner, by Harry Monroe McClanahan, A.M., M.D., Professor Emeritus of Pediatrics, University of Nebraska; member of the American Pediatric Society; ex-president of the Nebraska State Medical Society. J. B. Lippincott Company, publishers Philadelphia.

The purpose of this book, as the author himself states, is to present a modern clinical picture of the diagnosis, treatment, and management of the diseases of infants and children under conditions encountered by the family physician.

Pediatrics as a specialty has grown, both in the number of those who are limiting their practice to children and in the refinements of practical and scientific knowledge in this particular field. While the larger number of these specialists is almost without exception in the great centers, nevertheless the majority of sick infants, both in the cities and in the country, come first under the care of the general practitioner. Often it is not until complications arise that these patients are referred to the specialist.

With the belief that sick infants and children are and will continue to be under the care of the family physician, and that they have an inherent right to the best treatment that can be obtained, the author has presented his book. It represents largely his personal medical advice culled from a goodly number of years of practice, first as a general practitioner and later as a child specialist.

In recent years a number of pediatricians associated with universities have had the ability and time to investigate, from the laboratory side, many of the more intricate problems relating to the diseases of children. Their findings at home and abroad have been from both the clinical and pathological side, resulting in a large current literature which the author has carefully studied. He has attempted to supplement his personal knowledge by a digest of these recent scientific investigations. In order to keep to his purpose of writing a practical book, the author has eliminated any extended detailed discussions of pathology or the history of the disease. This was done, not that these subjects are unimportant, but in order to cover within a reasonable space a fuller discussion of the practical side of symptoms, diagnosis, and treatment, together with observations on the care and protection of the normal child in health.

PUBLIC HEALTH

Child Health Conference

Children in Williamsburg, Greenbrier county, had an opportunity to be examined for remedial defects when the child health conference was held there by the state department of health on January 18-19, 1929. More than 200 children were enrolled in the clinic, which was in charge of Dr. R. H. Paden and Miss Edna M. Hardshaw of the health department. They were assisted by Dr. J. W. DeVebre, of Ronceverte, and Dr. C. F. Mahood, of Alderson. This was the first clinic of its kind ever held in Williamsburg.

Quarterly Bulletin

An interesting bulletin was issued in January by the West Virginia State Department of Health, known as the Laboratory Number. This issue was of of particular importance to physicians because it carried a splendid article by Dr. H. M. Hall, of Wheeling, president of the West Virginia State

Medical Association, on "The Part the School of Medicine of West Virginia University Should Play in the Development of the State of West Virginia."*

The January health bulletin also carries articles by Elizabeth Parsons on the new state hygienic laboratory; by Dr. David Littlejohn on "The State's Responsibiliy for Adequate Health Program," and by Dr. P. B. Wingfield, Logan county health officer.

FROM OTHER JOURNALS

Advertising for Compensation Cases

At a meeting of the Council of the Medical Society of the County of Kings, held on December 5, 1928, the Board of Censors reported upon its consideration of the factors involved in advertising for compensation cases by members of the profession.

In their report the censors mentioned the fact that the membership of the society is governed by the principles of professional conduct of the Medical Society of the State of New York, in accordance with which it is not ethical to advertise to the laity by means of cards that a member is specializing in compensation cases.

The censors therefore recommended to the council that the council rule "that all cards, and placards, and pencils and other forms of advertising used by members of the society for the purpose of soliciting compensation medical practic ebe condemned." The recommendation of the censors was approved by the council and ordered published in the bulletin of this society.—*Bulletin of the Medical Society, County of Kings.*

Treatment of Malaria

It is the intention of the Department of Agriculture to take active steps in the immediate future to effect suitable changes in the various preparations on the market labeled for the treatment of malaria which do not contain adequate quantities of cinchona alkaloids, the department has just announced.

This action was decided upon as the result of the examination of more than 50 such preparations by the Food, Drug and Insecticide Administration. The announcement follows in full text:

It is well known that quinine, a cinchona alkaloid, if administered in sufficient quantities and over a sufficient period of time, will destroy the parasite that causes malaria. Some of the other cinchona alkaloids also are recognized as having anti-malaria virtue if administered in comparable dosage. The United States Pharmacopœia gives 15 grains daily as the average anti-malaria dose of quinine and several of its salts. It is the concensus of present-day medical opinion that this daily dosage, continued for a period of eight weeks without interruption, will usually suffice to prevent a relapse of the disease.

It is the intention of the Department of Agriculture to take active steps in the immediate future to effect suitable changes in the formulas for the various preparations on the market labeled for the treatment of malaria which do not contain adequate quantities of the cinchona alkaloids to meet the requirements for the treatment of the disease. Changes in the labeling will also be insisted upon where the claims made are unwarranted by the composition of the preparation. Included in these changes will be the omission of disease names for which the preparation is not a recognized competent treatment.

The Department of Agriculture assumes that in many cases the manufacturer will voluntarily make any necessary changes in their preparations or in their labelings to bring them into harmony with the provisions of the Federal food and drugs act. In those cases in which this is not done appropriate legal action will be taken.—*United States Daily.*

Sheppard-Towner

A bill authorizing the appropriation of one million dollars annually for a child welfare extension service in the children's bureau in the Department of Labor, introduced by Representative Newton of Minnesota last May, is now pending in Congress, before the Committee on Interstate and Foreign Commerce of the House of Representatives. The extensive publicity and propaganda in favor of this legislation during recent months justify the belief that an effort will be made to procure its enactment during the approaching short session of Congress. If the bill is not passed, work under the Sheppard-Towner Act must stop on June 30, 1929, when the act expires by limitation. The pending bill aims to perpetuate the principles of the Sheppard-Towner Act, but on an even broader basis.

The differences between the Sheppard-Towner Act and the legislation now proposed indicate the extraordinary acquisitiveness of the pending legislation. The Sheppard-Towner Act is self-limited;

*This paper was published in the January issue of the Journal (Ed. Note).

the pending bill seeks to establish a permanent policy. The Sheppard-Towner Act recognizes the right of every state to control health activities within its own borders; the pending bill would actually authorize the children's bureau to carry on its activities independent of state agencies. The Sheppard-Towner Act defines the method for the distribution among the states of money appropriated under its authority; the pending bill leaves to the children's bureau the determination of the amount of federal money that will be spent in any state and the amount that the bureau will demand as the price of the state's participation in the work. The Sheppard-Towner Act requires that every project, before being adopted, be approved by a board consisting of the surgeon general of the Public Health Service, the chief of the children's bureau and the commissioner of education; the pending bill substitutes for this a board devoid of authority and with advisory functions only, with which the chief of the children's bureau may or may not consult, as she sees fit, and whose advice she may reject or accept at her pleasure. The chief of the children's bureau is to be the chairman of the board and to appoint five of its nine members, while the commissioner of education, the surgeon general of the public health service, and the director of extension work of the Department of Agriculture make up a minority of three.

The Sheppard-Towner Act and the pending bill have, however, some points in common. Neither of them lays down any line of demarcation between the welfare and hygiene of mothers and children and the welfare and hygiene of the rest of the people, so as to limit operations under the act to a clearly defined field. Neither the Sheppard-Towner Act nor the pending bill contains anything to show why money appropriated for health activities should not be spent under the direction of the United States Public Health Service, which was organized for such work, instead of under a bureau that must duplicate a considerable part of the medical corps already organized and functioning in the Public Health Service if it is to work effectively.

The Board of Trustees of the American Medical Association has considered the pending bill and has voted to voice the opposition of the American Medical Association to it. Letters of protest against its enactment should be sent to senators and representatives in Washington. They should refer to H. R. 14070, A Bill to Provide a Child Welfare Extension Service, and for other purposes.—*Journal A. M. A.*, December 1, 1928.

Health Appeal

The advertising writers of our progressive land have found that the word "IT" in their profession means "Health Appeal." A cursory inspection of current periodicals indicates no lessening of the attention to the health angle. The folly of the all-or-nothing policy in foods, the ridiculousness of some of the arguments as to vitamin content, the preposterous claims for glorified antiseptics, the cautious venturings of time-tried tonics into the public field, and the dazzling claims of the promoters of light arouse the risibilities of the physician by their startling inconsistencies if not by their exaggerations. Who would have thought ten years ago that cigarettes would be sold to the American public not only by billboard displays of handsome damsels revealing unusual quantities of hosiery and epidermis, as they nonchalantly exhale streams of smoke from adenoidal nostrils, but actually by insistence on the healthful qualities of certain brands? Ah! brothers, we have come a long way in the passing decade!

In the periodicals for December the remarkable testimonial to the effect that Mrs. Whoozis, who could not even push the baby buggy, was able, after taking some yeast, to swim four times across the swimming pool at the country club, has given way to the assertion by Sir Arbuthnot Lane that yeast is what he thought the intestinal kink was ten years ago. The picture of Miss Rivergrove, Nevada, clad in a one-piece bathing-suit, who attained her present high state of pulchritude on a yeast diet, has given way, alas, to that of a heavily moustached Belgian professor who asserts, in a personal interview, that yeast is a marvelous laxative, or to that of a heavily bearded Teuton who has concealed himself behind his sage-brush so efficiently as to fail to realize that in America respectable physicians do not condone such public unveiling.

The growers of Japan tea, moved, no doubt, by the promotional efforts of the growers of coffee, assert in several popular publications that Japanese tea is the stuff to drink because it has vitamin C. Clever people, these Japanese! Nevertheless, Mattill and Pratt have concluded on the basis of scientific evidence that in everyday nutrition, despite its fairly high content of vitamin C, green tea has limited value as an antiscorbutic. "It can not be used by children," they say, "and should not be used by adults to replace natural foodstuffs which meet additional nutritive requirements." The American advertising agency that promotes the Japan tea campaign was fully informed as to the lack of scientific

evidence for the claims made, but presumably, like some other advertising agencies, it is more interested in lineage than in evidence.

Fellow's Syrup, long the inhabitant of the pages of medical advertising mediums that do not follow the Council on Pharmacy and Chemistry, now begins to venture in popular periodicals, quite tentatively and modestly feeling its way, perhaps, before embarking largely in the "patent medicine" field.

Most startling of all the appeals are those having to do with body-weight. The promoter of an after-dinner tablet urges his wares and more food with the striking slogan, "I have said good-bye to indigestion: bigger and better lunches." But bigger lunches, hastily eaten, have worked havoc with the digestion of the American business man. That American womanhood passed, during the last five years, through one of those periodic crazes that have afflicted womankind since the world began is not a secret. Indeed, women everywhere began to cultivate sylph-like figures, dieted themselves to the point of destruction; and tuberculosis rates, particularly for young girls, rose in many communities. The inevitable result of the serious dieting was to lower the consumption of flour, sugar and other carbohydrates so greatly that persons engaged in those industries became alarmed. Today the millers, the sugar institute, the confectioners, and the manufacturers of cereals are purchasing advertising space to counteract what was for them commercially a serious situation, and what promised to be, from the health angle, a dangerous situation. Such institutional advertising as is being used by these industries is submitted, before release, to medical authority, and some effort is being made to keep the advertising matter within reasonable bounds. At the same time the manufacturers of Lucky Strike cigarettes, having secured, they claim, statements from 20,679 physicians that Lucky Strikes were less irritating than other cigarettes, are promulgating a campaign in which they assert that these cigarettes do not cut the wind or impair the physical condition, and that a "Lucky Strike satisfies the longing for things that make you fat without interfering with a normal appetite for healthful foods." To which the simple reply is made: "Hooey!"

Some women do eat too much; overweight can be controlled by proper dieting, no doubt, in the majority of cases. Many people eat too much sugar and gorge on pastry! But the human appetite is a delicate mechanism and the attempt to urge that it be aborted or destroyed by the regular use of tobacco is essentially vicious. A statement by the advertising director of the American Tobacco Company asserts that the production of cigarettes this year will be more than double what it was ten years ago, and that the use of cigarettes has steadily increased in every year in the last fifteen. He cites among five reasons for the growth of his industry "increasing interest on the part of the medical profession in the social phenomenon of more widespread smoking, and the adoption of a more liberal attitude toward the cigarette and its effect upon the human body in the light of these improvements." That the medical attitude has become more liberal toward the smoking of cigarettes can not be gainsaid. There is, however, one aphorism in medicine that is as old as the science itself: "Moderation in all things." Unwarranted, exaggerated, unscientific and dangerous advertising campaigns are not the way to encourage a liberal attitude.—*Journal A. M. A.*, December 8, 1928.

GENERAL NEWS

Councillors Appointed

Dr. T. W. Moore, of Huntington, newly elected president of the Southern Medical Association, has just announced the appointment of his councillors for 1929. Included in this list is Dr. Walter E. Vest, of Huntington, who will represent West Virginia in the deliberations of the organization. Dr. H. Marshall Taylor, of Florida, is chairman of the new council.

Other members of the body appointed by Dr. Moore are: Dr. W. W. Harper, of Alabama; Dr. Morgan Smith, of Arkansas; Dr. William Gerry Morgan, of the District of Columbia; Dr. W. P. Harbin, of Georgia; Dr. John H. Blackburn, of Kentucky; Dr. Homer Dupuy, of Louisiana; Dr. Inman W. Cooper, of Mississippi; Dr. McKim Marriott, of Missouri; Dr. F. Webb Griffith, of North Carolina; Dr. William Weston, of South Carolina; Dr. Edward T. Newell, of Tenessee; Dr. H. Leslie Moore, of Texas, and Dr. Lawrence T. Royster, of Virginia.

Study of Endemic Pellagra

For more than twenty years the Public Health Service has been conducting studies of pellagra. As a result of these investigations it has been shown by Dr. Joseph Goldberger and his associates of the Public Health Service that pellagra is a disease of dietary deficiency. Methods of prevention and cure of this disease have also been pointed out.

A recent publication issued by the Public Health Service (Hygienic Laboratory Bulletin No. 153) contains some very interesting data collected in connection with a study of endemic pellagra in some cotton-mill villages of South Carolina.

As a part of the field investigations of pellagra there was begun in the spring of 1916 a study of the relation of certain social, hygienic, sanitary, and economic factors to pellagra incidence in some representative South Carolina textile-mill communities, so-called cotton-mill villages, in which the disease was believed to be endemic. On a varying scale, but without interruption, this study was continued until the fall of 1921; that is, during a period of about five and a half years.

The results of the first year's study have already been published. In the present communication, much delayed by the pressure of other continuing studies, there is recorded certain of the results of that phase of the subsequent study concerned with the incidence of the disease and the relation of this incidence to certain social, climatic, sanitary, economic, and dietary factors.

During 1917, in an aggregate population of 22,653 individuals, 1,147 cases of pellagra (an incidence rate of 50.6 per 1,000) were observed. Of the 4,104 households among which that population was distributed, 18.5 per cent had at least one member affected by the disease in that year.

Pellagra (in an endemic locality) is very much (two to six times) more prevalent than the experience of the physicians of the locality would seem to indicate.

The fatality rate of the endemic disease, when definitely marked cases of all grades of severity are considered, would appear not to exceed 3 per cent.

Striking peculiarities of age and sex distribution of the disease were observed.

The observations of age incidence appear to indicate what seems not to have been recognized heretofore, that endemic pellagra is preponderatingly a disease of children of from 2 to 15 years of age. Explanations of the peculiarities of age and of sex incidence are suggested.

The single woman, as compared with the married, widowed, or divorced, is relatively exempt from the disease. In the population group under consideration, the single woman is usually a wage-earner, which may place her in a somewhat more advantageous position with respect to diet than her married or widowed sister. The incidence of the disease was found to be markedly seasonal; 80 to 90 per cent of all cases had their "onset" within the period April to July, inclusive. One explanation suggested, in view of the proved dietary relation of the disease, is the variation in diet brought about by the seasonal modification of the food supply.

The seasonal incidence of cases distinguished by their occurrence singly or otherwise in a household, and as initial and recurrent attacks, was studied. The disease was found to have a marked and very sharply limited season of prevalence, the curve of which, with a slight lag, paralleled that of incidence. The study failed to disclose any consistent correlation between sanitary conditions and pellagra incidence. Such association as may at times be observed is regarded as accidental and to be explained by the intimate relation of the endemic disease to economic status, of which the sanitary condition may be an index.

The study reveals the existence of a striking inverse correlation between the incidence of the endemic disease and family income. The continuous study of a selected village during a period of nearly six years appears to demonstrate that income shortage was a fundamental, though indirect, controlling factor in relation to the year-to-year fluctuation in the incidence of the disease. It is therefore inferred that the year-to-year fluctuations in the incidence of the endemic disease are bound up with fluctuations in economic conditions that influence the ability of a certain section of the population to procure an adequate diet.

Marked seasonal variations in the food supply of a selected village are demonstrated. A relation of this variation in food supply to the striking seasonal incidence and prevalence of the disease is suggested.

Reactions of Protein

The peculiar reaction of some protein foods upon certain people, in some cases manifested by hives, vomiting, intense prostration or even convulsions, is described in a statement made public July 12 by the United States Public Health Service. These conditions, the statement said, result from "protein sensitization," or the abnormal body reactions to counteract the foreign protein. The full text of the statement follows:

It has been well known for many years that certain people are peculiarly disturbed by certain foods, the reaction taking various forms. In some cases, it is manifested by hives, and in others by vomiting, intense prostration, or even convulsions. We have known a case where even the smallest particle of

clam would cause distressing convulsions. The mechanism of these disturbances is now better understood, and these conditions are now known to be due to what is termed "protein sensitization"; in other words, the body reacts in an abnormal way to counteract the foreign protein.

Protein is known as the building or repair material in our diet, and it is found in large proportion in such foods as meat, fish, fowl, and eggs. But a certain amount of protein is found in practically all foods, and some of these foods, such as tomatoes, for example, which are not regarded as protein foods, nevertheless have sufficient protein to cause very serious disturbances in people who are sensitized to that particular form.

Protein may gain access to the body in other ways than by foods; for example, by inhalation, as is the case in hay-fever and some forms of asthma, through the skin, as is observed, for example, in certain forms of eczema, and by bacterial infection, as seems to be the case in a number of obscure disorders.

The unfavorable reaction may take the form of hay fever, asthma, eczema, urticaria (hives), and other skin affections, acute and chronic digestive disturbances, and, perhaps, in certain forms of periodic headaches, various vague nervous disturbances, and in albuminuria not due to some other known cause. Proteins are usually broken up by processes of digestion and their constituent parts absorbed by the body.

Ordinarily, little or no unchanged alien protein reaches the blood. When it does, and this alien protein is there digested, then the body acquires and to a marked degree retains the power to digest this particular protein. Accordingly, when thereafter this protein again reaches the blood tissues unchanged, it is rapidly digested, *i.e.*, broken down, and a reaction results. This reaction may take the form of any one or more of the disturbances mentioned above. Sensitization to more than one protein is quite common.

Particular parts of tissues of the body are usually predominantly sensitive to a given protein in a given individual. For example, one person may develop asthma from wheat, while another individual may have eczema from the same cause. The well-known fact that certain individuals have an attack of urticaria (hives) from eating strawberries or lobsters is an example of protein sensitization.

The liability of becoming sensitive to protein is thought to be, to a large extent, a hereditary trait. Not all individuals are subject to this possibility. It is most often manifested in childhood or in early adult life by some one or more of the previously mentioned abnormal conditions, but may be found at any age.

It is probable that many vague and recurrent disturbances of health are associated with protein sensitization, and it is notable that an individual who is sensitized to one protein may be sensitized to a number of others. There is a question whether this condition may not be fundamentally due to some disturbance of the ductless glands.

An individual, therefore, who has been subject to hives or hay fever or periodic upsets should have a very thorough test as to possible sensitization to any form of protein, not only substances well known to cause the conditions, such as ragweed, horse dandruff, cow dandruff, and the like, but also common food articles such as wheat, potatoes, tomatoes, and food substances generally.

Physicians have made a considerable number of these tests and have encountered some exceedingly interesting cases where protein sensitization to common food articles has existed without being previously suspected. By excluding such articles from the diet, or by certain methods of desensitization to certain types of protein, very remarkable relief is often afforded. We suspect that the failure often reported in hay-fever and asthma cases to secure relief by such measures is sometimes due to neglect to make a thorough search for all types of protein to which the individual is sensitized.

From what has been said, it must not be concluded that protein sensitization accounts for all cases of asthma, hay-fever, and hives. Some of them are undoubtedly due to quite other factors. A person suffering from these disorders should accordingly consult a first-class physician and submit to a thorough examination, including probably a series of skin tests, to discover protein hypersensitiveness.—*United States Daily.*

Goiter in Children

The United States Public Health Service has recently announced the results of investigations dealing with the effect of communicable diseases as relate to goiter. These studies reveal the following:

1. Thyroid examinations of 589 boys and 636 girls were made before and after communicable illnesses. After the illness no changes in thyroid size were detectable among 51.7 per cent of the boys and 45.6 per cent of the girls. Thyroid size was decreased in 13.8 per cent of the boys and 11 per cent of the girls. Increased size was noted among

34.5 per cent of the boys and 43.4 per cent of the girls.

2. The thyroids of 1,842 boys and 1,783 girls who did not have communicable illness in the interval were examined one year apart. No change in thyroid size had taken place among 48.4 per cent of the boys and 43.6 per cent of the girls. Thyroid size had decreased in 12.7 per cent of the boys and 18.6 per cent of the girls, while an increase was recorded among 38.8 per cent of the boys and 35.7 per cent of the girls.

3. A communicable disease census of 7,977 boys and 8.441 girls showed little difference in percenage incidence among the thyroid normal and thyroid enlarged children who had the same maladies.

There is some evidence to show that one of the immediate effects of communicable diseases among girls of elementary school age is a simple enlargement of the thyroid gland. However, this thyroid enlargement appears to be temporary in character. A comparatively short time, the length of which is yet undetermined, after a child recovers from a communicable disease, he is no more prone to changes in thyroid size than a child who has not had a communicable disease.

In so far as elementary school children are concerned, there appears to be no ground for assuming that the ordinary communicable diseases are responsible for simple goiter. The underlying causes of this malady must be sought for in other directions.

Alleged Deception

The Food, Drug and Insecticide Administration of the Department of Agriculture intends to take immediate action under the food and drugs act against all preparations represented by label or by circular accompanying the package as presentatives or treatments of influenza, la grippe, pneumonia, and related diseases, the Director of Regulatory Work, W. G. Campbell, stated January 16. The full text of his statement follows:

There is a widespread and probably a fully justified public apprehension about influenza and some manufacturers have not hesitated to take advantage of this situation by advertising their preparations in every available quarter as preventatives or cures for the disease. Unfortunately, the Food and Drugs Act does not reach false advertising statements appearing in the press, or in any advertising medium not included with the package of the preparation itself. The food and drug enforcing authorities are therefore powerless to check such misleading advertising, serious as the consequences may be in the case of those who are led to depend on such ineffective products and neglect the hygienic precautions recommended by public health authorities such as isolation, rest, sleep, diet, and proper ventilation.

It is a fact, generally accepted by medical authorities, based on world-wide medical experience, that there is no known drug or combination of drugs which will prevent or cure influenza. Products labeled as effective for this purpose will unhesitatingly be classed as misbranded within the meaning of the Food and Drugs Act and treated accordingly.

It may not be amiss to add that manufacturers are usually cautious about putting unwarranted claims upon the labels of their products, knowing that they render themselves liable under the Food and Drugs Act, and those who are inclined to take advertising claims at face value will frequently find that the labels themselves, or the circulars accompanying the packages of the drugs, do not repeat these claims.

Bluefield Baby Clinic

"The Cradle" is the name which has been given Bluefield's first free baby clinic, which has been opened to the mothers of underprivileged children of Bluefield and vicinity. The clinic was sponsored by Dr. A. E. Amick, Bluefield pediatrician, who has enlisted the services of Dr. J. E. Blaydes, eye, ear, nose and throat specialist, Dr. P. R. Higginbotham, colored physician of Bluefield, and C. H. Goodykoontz, of the Goodykoontz Drug Company.

Early Diagnosis Campaign

The 1929 "Early Diagnosis" campaign of the West Virginia Tuberculosis Association will be held this year during the entire month of April, according to Mr. George C. Rowell, executive secretary of that organization. Mr. Rowell said that special pamphlets and circulars would be sent out some time this month to the West Virginia doctors in an effort to stimulate interest in the coming campaign. A special brochure has been prepared by the National Tuberculosis Association for physicians on "Classification and Diagnostic Points."

Plans for the April campaign are rapidly nearing completion, and all of the county agencies have been requested to take an active part. Publicity for the campaign will be released early in March. A number of interesting slides and moving-picture films have been procured by the state organization to use during the campaign and will be routed over the state to various agencies requesting them during the month of April.

Radium Poisoning Under Fire

A thorough investigation of the effects of radium upon workers in the clock industry, where the substance is employed in luminizing watch and clock dials, and means of guarding the workers against it, is being undertaken by the United States Public Health Service, the surgeon general, Dr. Hugh S. Cumming, announced orally December 21.

Following a conference on December 20 with representatives of the industry and officers of the Public Health Service, it was decided to undertake the investigation, said Dr. Cumming. It was agreed at the conference that further precautions are necessary.

Dr. Cumming called the conference following occurrence of radium poisoning in New Jersey dial factories where seven men and thirteen women lost their lives and 23 other persons suffered injuries. All of the workers afflicted had been engaged in painting the dials of luminous watches and clocks with brushes dipped in radium paint.

Two committees will be appointed by Dr. Cumming within the next few days to pursue two distinct lines of investigation, he said. The first will study health conditions among radium workers and the second will codify the best known methods of application of precautionary measures.

Dr. H. S. Martin, medical examiner of Essex county, New Jersey, in relating of the cases, said that daily exposure to the penetrating radium rays unquestionably has serious effects. In certain cases, he explained, the injurious effect of radium poisoning might not appear until years later.

The blood-forming organs are the ones first attacked by radium, said Dr. Martin, causing a form of pernicious anemia. Moreover, he declared, "swallows" of radium emanations from the air cause a "bombardment within the body of the vital blood-forming particles by the most destructive rays known to science." He recounted numerous cases where medical scientists suffered severe injuries in their experiments with radium.

Dr. R. C. Moore, of Purdue University, differed with Dr. Martin, however, stating that he had suffered no harm after prolonged exposure with large quantities of radium in laboratories. "Radium has saved many more lives than it has lost," he declared.

Dr. Martin said this was not comparable to the daily contact of factory workers who are constantly placing the radium-dipped brushes between their lips.

Postvaccinal Encephalitis

Attention has been directed from time to time, in the columns of this JOURNAL, to the prevalence of various infectious diseases of the central nervous system. In the issue of August 2, 1928, there appeared an editorial on one of these disease, poliomyelitis, and a week later, Frémont-Smith [1] called attention to the changes in the spinal fluid occurring in meningitis, as well as its importance in the differential diagnosis of poliomyelitis, meningitis, tuberculous meningitis, brain abscess, and encephalitis lethargica.

In the general literature, moreover, one finds many references to these infectious diseases. The *Quarterly Cumulative Index Medicus* requires five closely printed columns to list the papers on epidemic encephalitis appearing in 1927; the various forms of meningitis necessitate nearly as much room. The literature is, therefore, vast and continually increasing. It is also interesting to note that there has been a change, in the last few years, in the subjects discussed; new syndromes, more clear-cut pathological pictures and even new diseases appear. Recently, at least one variety of encephalitis has been more thoroughly studied than ever before, and we now have the results of investigations by pathologists who believe that the postvaccinal form of encephalitis has certain characteristic features which serve to differentiate it from other types of central nervous system infection.

A report [2] from Great Britain of considerable importance, published this spring, on encephalitis occurring in persons who had previously been vaccinated, served to call attention anew to this disease. Perdrau examined the histological lesions in three fatal cases: one, aged 6, with the onset of nervous complications 12 days after a normal vaccination and death 4 days later; a second, aged 19, with the

onset 9 days after normal vaccination and death 14 days later; and a third case, aged 15, with the onset of symptoms 7 days after normal vaccination and death 4 months later. In one case the disease was almost fulminating and in another it only lasted two weeks before death. The character of the lesions is that of a meningo-encephalo-myleitis of varying severity and distribution; not unlike the general pathological appearance of other types of encephalitis. It is characterized histologically, however, according to Perdrau, by areas of demyelination around certain blood vessels similar to the extra-adventitial infiltration or "softening" referred to in an earlier paper by Turnbull and McIntosh.[3] The appearance of these areas, from which the myelin has been removed, is similar to that found in disseminated sclerosis, although the lesions are much more closely confined to the vicinity of blood vessels and are, therefore, not so bizarrely "disseminated" as in the latter disease. The exact character of the lesion has been discussed in some detail recently in a series of letters in the *Lancet*.[4]

All three investigators believe that the pathological histology of the postvaccinal cases is different from that of epidemic encephalitis. Perdrau, however, does not limit the type of lesion he has found to postvaccinal encephalitis alone, but considers that a similar histological picture may be found in cases of nervous disorders complicating smallpox, measles, and other fevers, as well as those occurring in the course of antirabic inoculations.

Whatever may be the outcome of this discussion, it would seem that we are still far from having a definite pathological picture of this disease. All we can say, at present, is that there has been described in Europe, chiefly in Great Britain and Holland, a clinical syndrome of nervous symptoms, with possibly distinct characteristic pathological features of encephalitis following vaccination. Turnbull and McIntosh agree with Perdrau that the pathology of the postvaccinal cases is different from that found in poliomyelitis and in encephalitis, and that probably the disease has a distinct pathology of its own.

REFERENCES

1. Fremont-Smith, Frank: The Spinal Fluid in Meningitis *New England Jour. of Med.*, 1928, CXCIX, 264.

2. Perdrau, J. R.: The History of Postvaccinal Encephalitis. *Jour. Path. and Bact.*, 1928, XXXI, 17-32, 6 pl.

3. Turnbull, H. M., and McIntosh, J.: Encephalo-Meylitis Following Vaccination. *Brit. Jour. Exper. Path.*, 1926, VII.181.

4 *The Lancet*, May 26, 1928; June 9, 1928; June 16, 1928, and June 23, 1928.

—*New England Journal of Medicine.*

Martinsburg Program

Work on the program for the sixty-second annual meeting of the West Virginia State Medical Association, to be held at Martinsburg on May 21-23, inclusive, has been progressing rapidly during the past few weeks and the members of the committee on scientific work expect to have their work completed by March first. Dr. O. B. Biern, of Huntington, chairman of this committee, held a meeting at Huntington on the morning of January 24 and all of the members who were present felt they could complete their respective assignments within the next thirty days.

Among the eminent physicians and surgeons who have been asked to appear on the Martinsburg program are such men as Dr. Edward Horgan, of Washington, D. C.; Dr. William M. Sherman, of Philadelphia; Dr. Haven Emerson, of Columbia University; Dr. James MacGlester, of Birmingham, Ala.; Dr. John D. Deaver, of Philadelphia; Dr. W. E. Moore, of The Mayo Clinic, Rochester, Minn., and Dr. Emil Getch, of New York.

Those present at the Huntington meeting on January 24 were: Dr. Biern, chairman; Dr. Harry M. Hall, of Wheeling, president of the West Virginia State Medical Association; Dr. C. A. Ray, of Charleston, past president; Dr. W. E. Vest, of Huntington, councillor; Dr. G. H. Barksdale, of Charleston; Dr. A. G. Rutherford, of Welch; Dr. Robert King Buford, of Charleston; Dr. David Littlejohn, of Charleston, and Mr. Joe W. Savage, executive secretary of the association.

Statistics

Statistics are like knives; they can be used for good or evil, observes Dr. Thurman B. Rice in *Hygeia* for February. The commonest sentence heard in debates usually begins: "Statistics prove that—." But Dr. Rice warns that statistics prove nothing except when they have been accurately collected, compiled, interpreted, and applied.

In the hands of some devotee of a faddish project a given set of figures may prove or disprove anything. When one hears a speaker quote figures from memory or without giving the source of his information, it is time to go home, says Dr. Rice. It is easy to forget whether a certain death rate was 14 per thousand or 14 per hundred thousand.

The unscientific man uses figures to prove what he started out to prove, while the scientist uses them to lead him to the truth.

DECEMBER MORBIDITY REPORT

	Chickenpox	Diphtheria	German Measles	Influenza	Measles	Poliomyelitis	Scarlet Fever	Smallpox	Tuberculosis All forms	Typhoid Fever	Whooping Cough
Barbour				91							
Berkeley	5	10					16			1	
Boone	4	6		259			5			1	
Braxton	4	4		116			5	6			
Brooke		7		645	78		1				
Cabell	3	23		197			36	7		1	
Clay				150					1		
Doddridge				128					1		
Fayette	2	3		285			10				
Gilmer						2	2			1	
Grant				1	4						
Greenbrier		1		325	4						
Hampshire				30	2		2		1		
Hancock		2		40			4		1		
Harrison	169	2		590	10		20		7		2
Jackson	5	1		348							
Jefferson				4					1		
Kanawha	66	12		504	3		26		6	1	18
Lewis	4			8	6						
Lincoln				5			1				
Logan	4	4	1	787			4	1	2	1	3
McDowell	27	14		1,311	38		14			18	
Marion	13	4		2,064		1	13				6
Marshall	10	3		189	2		4		2		6
Mason				182							
Mercer	12	1		846			11			1	3
Mineral	28	4		61	4		3		13		20
Mingo	9	5		105			6	3		4	
Monongalia	3	6		2,948	8		7			1	
Monroe		1		43			10				
Morgan	1			17	10		2				
Nicholas		1		1,000			5				
Ohio	39	2		40	31	2	2		2		2
Pendleton				2							
Pleasants		11									
Pocahontas		1									
Preston	1										
Raleigh	11	9		1,524	1		10	4			
Randolph		1		180			1				6
Ritchie				9	28						
Roane		2					2				
Summers	28			690			20		1		
Tucker				2	20						
Tyler				10	34		3				10
Wayne		1		26	15					1	
Webster								3	2		
Wetzel	2			80	4		4				19
Wood	3			723	19		15	61			
TOTALS	453	141	1	16,565	321	5	244	105	40	31	95

More Quackery

Tuberculosis patients are peculiarly susceptible to quackery, and, therefore, the quacks reap a rich harvest from them, declares Dr. Arthur J. Cramp, director of the bureau of investigation of the American Medical Associationp in an article in *Hygeia* for January.

In the first place, the person with tuberculosis, like many others, believes that every disease can be cured by some remedy if only one knew where to find it. Add to this the fact that a reputable physician frankly admits that he knows no drug that will cure tuberculosis. Then, too, the periods of remission in that disease create an optimism that plays into the hands of the faker.

The "consumption cure" is exploited principally through the mail. Many that have flourished have gone out of business following investigation by the American Medical Association or by federal authorities. Some still are sold.

Investigation of testimonials published by the promoters frequently reveals that the persons who wrote them are dead. In one case a quack continued to publish the testimonial of a woman after her death over the protest of her daughter. This particular nostrum was analyzed by chemists of the American Medical Association and also by federal chemists. It was found to be a solution of benzoate of soda, a guaiacol salt, and strychnine in glycerin and water, colored with a coal-tar dye.

The fake consumption cure can be abolished only through education, Dr. Cramp concludes. The tuberculosis patient, like other people, is gullible, not not because he lacks brains but because he lacks knowledge.

WOMAN'S AUXILIARY

Kanawha County

The twenty-first meeting of the Woman's Auxiliary to the Kanawha Medical Society was held on November 19, 1928, at the home of the president, Mrs. M. I. Mendeloff, 1707 McClung Street, Charleston. There were 17 members and one guest present, as follows: Mrs. M. F. Peterson, Mrs. Mary McGee, Mrs. R. K. Buford, Mrs. J. B. Houston, Mrs. I. P. Champe, Mrs. M. L. Dillon, Mrs. Hugh Robins, Mrs. B. S. Preston, Mrs. W. A. Willis, Mrs. W. W. Point, Mrs. G. H. Barksdale, Mrs. Dan Barber, Mrs. W. S. Shepherd, Mrs. W. A. Thornhill, Mrs. R. J. Ford, Mrs. M .I. Mendeloff, Mrs. V. T. Churchman, Jr., and Miss Trent, public health nurse.

The meeting was called to order by Mrs. Mendeloff. The minutes of the last meeting were read and approved. The treasurer reported a balance of $35.86 in the bank. Mrs. B. S. Preston, chairman of the *Hygeia* committee, gave her report, and added that she expected every doctor's wife to subscribe to *Hygeia*.

Mrs. Mendeloff appointed a nominating committee for the nomination of new officers, the election of which will take place at the next meeting. The committee is composed of Mrs. B. S. Preston, chairman; Mrs. W. S. Shepherd, and Mrs. W. A. Thornhill.

Mrs. R. J. Ford gave a report of her investigation of the high school practical nursing class. She found it a very worthy cause, and the women of the auxiliary resolved to assist it. This class, which is just starting in high school, is to give the young girls practical training in caring for the sick and for babies. Miss Trent, of the school nursing service, will be in charge. Of course, the project being new, the class is badly in need of funds. Mrs. Barksdale moved that the auxiliary donate twenty-five dollars to the cause, the motion being seconded by Mrs. Shepherd. Miss Trent, of the public nursing service, then gave a very interesting talk, explaining in detail about the practical nursing class in high school.

A very fluent paper on "The Microscope" was then given by Mrs. G. H. Barksdale. One hardly realized that there was so much to know about the microscope until the presentation of Mrs. Barksdale's paper. After this our very interesting meeting came to a close.

Mrs. V. T. Churchman, Jr., of Charleston, was elected president of the Woman's Auxiliary of the Kanawha Medical Society at a meeting held at the home of Mrs. I. P. Champe, 1517 Virginia Street, Charleston, on the evening of January 16. Other officers named at the January 16 meeting were: Mrs. I. P. Champe, vice-president; Mrs. M. F. Petersen, secretary, and Mrs. H. R. Glass, treasurer.

A very interesting paper was presented at this meeting by Mrs. M. L. Dillon upon "The Life of Jane Todd Crawford." The paper was written by Mrs. A. T. McCormick, of Louisville, Ky., president of the Southern Medical Association. About twenty members were present for the meeting.

MRS. V. T. CHURCHMAN, JR., Secretary.

The West Virginia Medical Journal

Directed and Edited by the Committee on Publication

[The Committee on Publication is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible]

JAMES R. BLOSS, *Editor-in-Chief* - - - - - - - - Huntington

ASSOCIATE EDITORS:

WALTER E. VEST, Huntington — HARRY M. HALL, Wheeling — J. HOWARD ANDERSON, Marytown — C. A. RAY, Charleston

MR. JOE W. SAVAGE, *Secretary-Business Manager*, Charleston

Entered as Second Class Matter, January 1, 1926, at the Postoffice at Charleston, West Virginia

Vol. XXV — MARCH, 1929 — No. 3

THE TREATMENT OF SYPHILIS *

By CARROLL S. WRIGHT, M.D.

Associate Professor of Dermatology and Syphilology, Graduate School of Medicine, University of Pennsylvania

Philadelphia, Pa.

Since the beginning of the twentieth century great strides have been made in the treatment of syphilis. Previous to 1909, we were dependent upon mercury and iodides alone, and although these drugs would nicely heal the objective manifestations, we now know how relatively impotent they were in arresting the course of the disease. In other words, it was then a case of "Once a syphilitic, always a syphilitic." With the introduction of the many new drugs the treatment of syphilis has become much more complex. No longer is it a matter of giving out a large bottle of protiodide pills, but a matter of considering each case in all its details and deciding how we may best prevent further developments, and, if possible, cure the patient.

To Ehrlich and his research in organic chemistry we owe our greatest debt. Little do we realize, as we easily mix and inject a dose of neoarsphenamine, the endless thought and effort that must have been necessary before there finally was produced "salvarsan," Ehrlich's 606th formula, all of which had to be conceived, prepared and tested; and, still not contented, the work went on until there was produced in the 914th formula a preparation, neoarsphenamine, which could be easily prepared and administered by any physician in his office without special equipment or training. The next epoch-making discovery, although it passed comparatively unnoticed for a time, was tryparsamide. In 1921 Leviditi and Sazeraz reported their success in treating syphilis with bismuth, a drug which has to a great extent replaced mercury as an adjunct to the arsenobenzenes. Recent years have also seen the general recognition of malarial inoculation as perhaps our best weapon in combating the spirochetal invasion of the brain in paresis, and also an excellent weapon in other late manifestations of syphilis.

In spite of all the improvements in the therapeutics of this disease, the time limits for treatment have not been shortened. The introduction of the Wasserman test, newer methods of clinical examination, and inoculation experiments with the glands of patients known to have been infected with the disease have shown that cure or complete arrest of the infection is impossible with just a few injections of an arseno-benzene. Ehrlich's great hope was to produce a drug that would, in a single dose, completely annihilate every spirochete in the body. Unfortunately, the spirochete, once it obtains a foothold in the body, attempts to make its position secure by throwing up battlements of tissue changes into which the spirochetocidal remedies penetrate with difficulty. We know that these battlements must be

* Read before the West Virginia State Medical Association at Fairmont on May 23, 1928.

bombarded continually for a long period of time, if eventually all of the besieged spirochetes are to be destroyed. It is unfortunate that Ehrlich and the other early users of the newer organic arsenicals gave the impression that cure was possible by one or just a few injections of an arseno-benzene. Even at the present time it is not rare to be asked by some physician to explain why a patient to whom he has given six or eight injections of neoarsphenamine has not become Wasserman negative.

It is with difficulty that the lay public in general is made to realize that the old adage, "Three minutes with Venus and three years with Mercury," has not changed as regards the time limit of treatment. We do not and should not place a time limit upon the duration of treatment in a given case before any therapy is instituted, but the patient must be made to realize from the outset that treatment is o be a matter of years and not weeks or months.

How unfortunate it is that all physicians who would treat syphilis are not so well endowed with worldly wealth that the matter of fees would need no consideration! The patient who sees a primary lesion and secondary rash disappear in a few weeks is apt to look with suspicion at the physician who tells him that he must continue treatment for many months or even a year or two more; particularly if he finds that the Wassermann reaction is negative he feels that he has been blessed with a rapid cure and discontinues further therapy, which is, in his opinion, only a nuisance and an expense. I firmly believe that the entire situation should be as clearly explained to the patient before any therapy is given, when his intelligence permits, and all reference to the Wasserman test is better left out of the conversation. In time the laity will again be educated to the necessity of long-continued treatment for syphilis if this course is followed. The Wasserman test should be a guide to the physician and not the patient.

Standardization of treatment has thus far proved impracticable, but I believe that it is well for every physician to have a routine method of treatment which he knows to be modern and satisfactory, and to follow this routine as nearly as possible, considering, of course, the individual factors in each case. The United States Public Health Service, through conferences on venereal disease control, has endeavored to outline a standard method of treatment, and it is suggested that any one interested should write for venereal disease bulletins which give, in detail, suggestions for the management and treatment of cases of syphilis.

Drugs to Be Used.—When we are confronted with a fresh case of syphilis, there are four drugs that we may call upon to fight the battle: the organic arsenicals (considered for the present as a unit, but including arsphenamine, neoarsphenamine, sulpharsphenamine, and tryparsamid), bismuth, mercury, and the iodides. I have named these in what I believe to be their order of importance. All these drugs may be employed with benefit, for the more bullets we have in our gun the more certain we are to destroy. Three effects are desirable from the remedies which we are to employ in treating syphilis: first, the destruction of spirochetes; second, the stimulation of tissue resistance, and, third, the breaking down of syphilitic fibrous tissue formations. No one of the various drugs named can accomplish all three of these things.

We know that the arsenobenzenes are direct spirochetocides. Injected into the blood stream, the drug is carried to all parts of the human economy, destroying the spirochetes with which it comes into contact. It is unfortunate that, as it diffuses its way through the body, it does not come into immediate contact with all tissues, and in failing to do so some of the living organisms remain. Ehrlich's hope of producing a drug which would entirely sterilize all of the tissues in the entire body with a single dose fell far short of the mark. In fact, in occasional cases of early syphilis the arsenobenzenes in any amount will fail to bring about complete clinical and serological cure. In choosing an arsenobenzene several factors must be considered. We know that arsphenamine, or "606," is the most powerful spirochetocide, but has the disadvantage of being more toxic and so can not be used in dosage equal to neoarsphenamine. Neoarsphenamine has the advantage of being efficacious, easily administered, and low in toxicity. Sulpharsphenamine, injected intramuscularly, is therapeutically a most excellent drug, but causes a sufficient degree of pain to discourage the average patient. Sulpharsphenamine has a distinct field of usefulness in those rare adult patients in whom no vein is obtainable and in children under the age of two who as yet have not developed veins sufficiently large.

Bismuth and mercury may for the moment be considered together. Their action is much the same. While in the test tube either will destroy spirochetes, we do not know how powerful a spirochetocidal action they exert in the human body, for the con-

centration that they reach in the blood is extremely low. In view of this, it becomes evident that these two remedies must exert some other effect in order to be of such great value in syphilis. The theory has been advanced that they stimulate the natural tissue resistance to the spirochetes. Dr. Greenbaum and I showed, two or three years ago, the value of increasing the natural protective mechanisms of the body when we demonstrated that the intramuscular injections of 5 c.c. of milk protein in patients with cutaneous manifestations resulted in improvement of the local lesions without resorting to any true antisyphilitic remedies. In choosing between mercury and bismuth, bismuth has the edge. Bismuth is a more active antisyphilitic remedy than mercury, and, where it is possible to give injections, it should be employed as the first adjunct to arsenobenzene therapy. Bismuth, furthermore, has the advantage of being less toxic in ordinary therapeutic dosage than is mercury, and consequently can be used simultaneously with an arsenobenzene. The value of mercury at the present date lies in its being an excellent alternate for bismuth and the fact that it is adaptable to several methods of administration. Injections of mercury are more painful than injections of bismuth. About four or five years ago, before bismuth was introduced into the Graduate Hospital, it was difficult to get patients to come for mercury injections. Now there are fifty or sixty patients coming twice a week to get injections of bismuth. It is our custom to use mercury and bismuth in approximately the same dosage; from one to two grains.

As previously stated, the iodides have no spirochetocidal action, but are a valuable adjunct to the spirochetocidal remedies, as they cause resolution of syphilitic infiltrates. Their use is recommended in all stages of syphilis.

APPLICATION OF THESE REMEDIES

Early Syphilis.—It is of extreme importance that early syphilis be treated well. This is the one stage of the disease that may be considered as curative, and is the stage of the disease which is the most infectious. If every case of syphilis could be efficaciously treated from the very onset, the disease could be eradicated from the face of the earth in a few years with our present remedies. I place considerable weight upon the recognition of the chancre, emphasizing the necessity for darkfield examinations. The reason for this is that I wish to emphasize the necessity for early and efficient therapy. A few syphilologists have held the view that it is better to wait for the end of the secondary period before beginning therapy in order that the natural immunity of the body to the disease may be fully developed. There are several reasons for not accepting this viewpoint. In the first place, the patient is permitted to go about untreated during the very time when he or she is most likely to disseminate the disease. This is against all principles of preventative medicine and public health. Secondly, we believe that the earlier the patient is treated the better the opportunity for a complete arrest or cure of the disease. Having determined that the patient does have syphilis, how shall we proceed? The method of treatment as carried out by Dr. Schamberg and myself is as follows: The first day, the patient is given an intramuscular injection of 100 mg. (1½ grains) of potassium bismuth tartrate. This will begin the assault upon the spirochetes, but will not cause such a tremendous destruction of spirochetes in the first 24 hours as to cause a toxic reaction. In 24 to 48 hours the patient is given an initial injection of 3 decigrams of neoarsphenamine intravenously. For the next 12 weeks, both an injection of bismuth and an injection of neoarsphenamine is given each week, spacing the injections by three- or four-day intervals. The dosage of neoarsphenamine is raised the second week to .45 and the third week to .6 grams, but no higher. In this way, there is given a total of 1.2 grams of bismuth and about 7 grams of neoarsphenamine. Of course, it is needless to remind you that a close watch should be kept upon the kidneys, and that this routine is subject to modifications if any untoward reactions occur. It has been our experience in every case of sero-negative primary syphilis, and sero-positive primary syphilis, that the Wasserman has respectively remained negative or been reduced to negative by this therapy. In secondary syphilis, almost 100% of the cases treated thus far have been sero-negative upon the completion of this 12-weeks' course of treatment.

We now change to another drug—mercury. The patient may use mercurial inunctions, if he can be depended upon to be conscientious, for the next one or two months. After this, a course of 16 to 20 injections of bismuth intramuscularly is given and then the Wasserman test is repeated. If still negative, a short course of mercurial injections or inunctions may be given and then another long course of bismuth. I emphasize the use of bismuth as we have found it to be well tolerated over a long period of time and to give excellent results. This now brings us to the beginning of the second year.

Sero-negative primary cases which have remained persistently negative may be considered as cured, provided that the spinal fluid is also negative. We sometimes give a course of 12 injections of bismuth twice during the second year in order to be over-cautious. Cases in which the treatment was originally started after the Wasserman became positive require active treatment throughout the second year. We usually begin the second year by repeating the 12-week course of neoarsphenamine and bismuth, provided there are no contraindications, and then continue throughout the remainder of the year with neoarsphenamine and bismuth. The third year is then one of observation and the Wasserman test should be made at intervals, and a spinal fluid examination once. If all are negative, the syphilis may be considered as arrested.

Complications are usually rare in these cases. The patients are, more often than not, young and tolerate treatment well.

This routine of treatment differs from that recommended by the United States Public Health Service, as well as the standard treatment suggested by Moore of Baltimore. The majority of treatment methods insist upon the use of arsphenamine. I have already stated the reason why we have felt that all could be accomplished with neoarsphenamine that can be accomplished with arsphenamine, and with less risk to the patient. I might say briefly that the standard treatment for use in health clinics is as follows: A first course consisting of a spirillicidal series of 3 arsphenamine injections, 0.3, 0.4, 0.5, or its equivalent in six days, is followed by weekly injections of 0.4 to 0.6 grams to a total of 8 injecions. If the blood Wasserman test is positive after the eighth injection of the first course, the course is prolonged to 10 or 12 injections. The second and third courses of 8 injections each are reinforced by a fourth and even a fifth course if the blood Wasserman had been positive after the first course. The interval between arsphenamine courses is 6 weeks. Mercury is given by inunction or intramuscular injection of the soluble salt in oil of the mercury salicylate in the intervals between the arsphenamine courses.

Whatever procedure you may follow, let me emphasize the necessity of adequate treatment. Far better to overtreat than to undertreat, provided there are no signs of intolerance. The early users of the arsenobenzenes believed that one or a few injections of the drug completely cured the disease. It was soon found out that the patients were by no means cured by these brief courses of therapy, but returned in a year or two with relapses which took various forms—sometimes isolated nerve palsies, nervous system changes, etc. The one or two injections served merely to destroy the easily available spirochetes but left isolated foci. The natural immunity which would develop in wholly untreated cases failed to develop and the isolated foci of organisms grew on, in time causing neuro-recidives.

Latent Syphilis.—I might say that a large number, if not a majority, of the patients we see with syphilis today are to be classified under that loose heading, "Latent Syphilis." In cases of untreated or insufficiently treated syphilis there follows the secondary stage, a period varying from a few months to many years, during which the patient has no manifestations of the disease other than a positive Wasserman reaction. During this period the spirochetes are in a stage of quiescence, due to the restraint of the immunological processes developed during the secondary stage; at least they appear to be inactive, although it is during this period that they are often causing those destructive changes that result in tertiary visceral skin or central nervous system manifestations. It is these cases that constantly confront us in the hospitals where they are discovered by the routine Wasserman test. It has been known to happen that a patient comes to the hospital for an appendectomy and, after routine laboratory examination, it is discovered that he had a four-plus Wasserman. These cases are the hardest kind to treat, and treatment should be mild, at least in the beginning. Before any therapy is started, examination should be made as to the status of the cardio-vascular system, liver, kidneys, and nervous system. Many cases which at first appear to have no other manifestations of syphilis than a positive Wasserman reaction are sometimes found to have visceral or central nervous system change on careful study.

Assuming that the case is a case of true latency, we prefer to treat cautiously, beginning therapy with a course of bismuth or, if you prefer, mercury, and then later perhaps a course of neoarsphenamine. Iodides are by all means indicated in these cases for syphilitic infiltrates may certainly be expected to have formed. Routine or standard treatment for latent syphilis is impossible, for each case must be judged individually. It is our custom to give first a course of 16 injections of 100 mg. each of potassium bismuth tartrate, followed, if the patient is not over 50 years of age, by a course of 12 injections

of neoarsphenamine, keeping the dosage to 6 decigrams or less. Mercury may next be used, either by inunction or injection, and then more bismuth. These cases should be kept under observation for a number of years, if not indefinitely, for they are liable to tertiary changes unless treated from time to time.

Tertiary Syphilis.—The subject of treatment of tertiary syphilis can not be considered under a single head. We must consider the cases according to whether the manifestations are cutaneous, visceral, or central nervous system. In brief, cases of tertiary cutaneous syphilis may be treated in the same manner as cases of latent syphilis, except that we do not routinely advise the use of the arsenobenzenes in patients over 50 years of age.

In visceral tertiary syphilis the greatest caution is necessary to prevent the treatment from doing harm instead of good. For instance, in cardio-vascular syphilis what is to be hoped for? Curative results or even arrest of the disease is not to be expected. The arsenobenzenes must be used with great caution, because of their rapidity of action and the possibility of producing a Herxheimer flare-up. A too rapid healing of a syphilitic fibrosis which is already partially obliterating a coronary vessel may result in closure of the vessel. Also an edema at some spot of active gummatous arteritis, as in the Herxheimer flare-up, may result in death. These cases must be treated with great caution. Either extremely small doses of neoarsphenamine (0.075 to 0.1 gram), mercurial inunctions or injections, or bismuth injections are recommended. Often severe cases are benefited most by rest in bed and the taking of nothing but iodides.

In the same way, in treating syphilis of the liver, too rapid healing with diffuse contraction or localized deformities adversely affect the patient by obstructing the portal circulation, with resultant ascites or jaundice. We desire this healing to take place slowly, to give an opportunity for a collateral circulation to develop and new bile ducts to form. Here, again, we prefer to use bismuth or mercury in preference to the arsenobenzenes, although it must be realized that treatment must be sufficient to prevent the further spread of the disease.

My wish in discussing cardio-vascular and hepatic syphilis is to emphasize the great necessity for caution. I have seen deaths result from the too hasty decision to use arsphenamine and from lack of care in determining the presence of cardio-vascular or hepatic syphilis before starting treatment in a patient with a positive Wasserman reaction.

Treatment of Neurosyphilis.—The development of tryparsamid and malarial infection therapy in the treatment of general paralysis has reached the point where it has superseded, for curative effects, the previous therapeutic procedures. Spinal therapy is used but seldom at the present time, whereas a few years back it was considered the only hopeful method of treating central nervous system syphilis. Malaria is used not only as a method of treating paretics, but as a prophylactic therapeutic procedure in early spinal syphilis to prevent the development of the much more serious paresis or tabes.

Tryparsamid, first prepared by Jacobs and Heidelberger of the Rockefeller Institute, has been used in the treatment of cerebrospinal syphilis in many countries and its value well proven. Tryparsamid is a white, crystalline powder, readily dissolved in cold water, and used in a dosage from 1 to 3 grams. There is an absence of immediate and late reactions and injury to the eyesight is the only complication to be feared. Injury to the eyesight occurs in from 8% to 15% of the cases treated. The patient is usually able to give warning if he complains of a blurring of the vision or an inability to see objects to one side or at the feet, due to contraction of the visual fields. These symptoms are particularly likely to occur following the first five injections. When such symptoms occur, the drug should be stopped immediately. Optic nerve involvement due to syphilis is not a contraindication to the use of the drug, but this condition may be actually improved in some cases.

Tryparsamid finds its greatest usefulness in the treatment of paresis, and in those neurosyphilitics whose spinal-fluid findings indicate that they may be headed toward paresis. I usually combine tryparsamid therapy with conjoint bismuth therapy, using an injection of each weekly, and the results thus far have been very encouraging. I have recently had a case treated with tryparsamid and bismuth which will serve as an example of what may sometimes be expected. A man, 38 years of age, following spinal fluid examination which revealed a high cell count, positive blood and spinal-fluid Wasserman, and a typical paretic goldsol curve, was placed under the care of Dr. Schamberg and myself by the family. The symptoms of paresis were well marked, consisting of loss of memory, speech difficulties, etc. After his second injection of tryparsamid and second injection of bismuth, he was

so much improved as to be able to come to the office alone from some distance. His memory improved and he was able to return to his work, and at the present time, after a course of twelve injections of tryparsamid and second injection of bismuth, he is symptomatically well. He can discuss politics, the general business situation, the presidential possibilities, as well as any one. Of course, how long this remission will last we do not know.

Malarial Inoculation.—Perhaps the greatest innovation introduced in the treatment of syphilis has been malarial inoculation for paresis. Reports of the alleged beneficial effects of febrile diseases on various psychoses have been current since the days of Hippocrates. Several methods of producing fever in patients suffering from general paralysis had already been tried when Wägner-Jauregg introduced the malarial method in 1917. The success of this uunsual therapeutic procedure has been such that it should be always considered when we are confronted with a patient with central nervous system syphilis.

The technique is as follows: From 5 to 10 c.c. of blood are taken from a patient known to have malaria, and either injected again immediately into the muscles of the back of the patient who is to be inoculated, or, if the patient is not at hand, the blood is placed in a sterile test-tube containing one or two c.c. of sodium citrate solution. This citrated blood will be usable up to 24 hours, although the sooner it is injected again the surer it will take. In from 10 to 20 days the inoculated patient will have a chill, followed by a fever varying from 101 to 105 degrees. The disease now runs the course of a typical malaria. Care should be taken to inoculate the tertian malaria, for this type is more easily cured than the quartan. The patient is allowed to have from 8 to 12 paroxysms, depending upon his ability to withstand the repeated attacks of fever. The greatest care must be taken to prevent the taking of any coal tar during the period of inoculation or afterward, until it is desired to stop the fever, for even five grains of aspirin may suffice to cure the infection.

Observations have been published by numerous syphilologists, neurologists and psychiatrists, and it has been found that good results are obtained in a fairly high percentage of the cases treated. The beneficial effects may appear during the course of the infection, or may not appear until some time after the malaria has been cured. It is probable that the beneficial effects are largely due to the heat produced. Schamberg has shown that scrotal chancres in rabbits can be cured by giving the animals extremely hot baths. It has been shown that spirochetes disappear from the brain of paretics who have been treated by means of malarial inoculation.

Our own results have been such as to make us feel that the malarial inoculation should certainly be used in cases of paresis and in those cases headed toward paresis.

SPINAL ANESTHESIA *

By J. A. GUTHRIE, M.D.,
and
BYFORD H. DENMAN, M.D.
Huntington, W. Va.

Pitkin says, "Since the time of Hippocrates there has been an unwritten or implied law between the patient and the physician or surgeon, that it is the duty of the professional attendant to avail himself of every possible means within his power to preserve the life of the patient. In every case where the professional attendant is in doubt as to his diagnosis or method of treatment, he calls others in consultation and avails himself of all laboratory facilities. If he is conscientious and feels that his professional skill is wanting, he refers the case to one more experienced in that particular branch of the profession. The laryngologist would not attempt a hystorectomy. A gynecologist could not be expected to do a cataract extraction, nor a pathologist an appendectomy. They consider what is best for the patient and act accordingly; but does the profession, particularly the surgical profession, act in the same manner regarding anesthesia? Probably not, and I think we are safe in saying that, generally, there is little, if any, consideration given by the surgeon to the anesthetic to be administered; frequently it is left to the anesthetist, and the results are in direct ratio to the experience and ability of the latter. Sometimes it is left to the decision of a nurse anesthetist.

To prevent this, some states have been compelled to pass laws to preserve the lives of citizens that might otherwise be sent to oblivion by inexperience. The anesthetist, to be proficient, should be able to administer all forms of anesthesia, and only with these qualifications can an anesthetist be considered proficient. To administer inhalation anesthesia to patients suffering with eclampsia or

* Read before the Cabell County Medical Society, Huntington, West Virginia, on November 14, 1928.

pernicious vomiting, diabetes, nephritis, drug addiction, alcoholism, decompensated hearts, hypertension, arteriosclerosis, bronchitis, pleurisy, pharyngeal or tracheal obstruction; anemias, primary, secondary or pernicious; general peritonitis, strangulated hernia, intussusception, volvulus, localized or pelvic peritonitis, shock, emaciation, or obesity, one is not adhering to the implied law, but is, in fact, doing harm to the patient and contributing to the hospital's mortality list. All of the above classes of cases do exceedingly well with spinal or regional anesthesia. One must consider the mortality of inhalation anesthesia, for most reports on inhalation anesthesia are worthless. For the greatest part these come from the specialists of inhalation anesthesia and the largest clinics, direct from the operating table and without consideration of the secondary mortality. The small hospital and its experienced anesthetist's results are never recorded, and, therefore, there is no record of the mortality in those fields where the greatest mortality really exists. The real mortality of inhalation anesthesia is not from the operating table, but is secondary. The secondary mortality is ninety-five per cent of the whole as compared with a meager five per cent of primary mortality. How many surgeons can say that they have had one hundred consecutive cases without some of the post-operative complications of inhalation anesthesia, such as post-operative shock, pneumonia, bronchitis, distension, ileus, acute dilatation of the stomach, acidosis, lung abscess, albuminuria, or suppression?

"The primary mortality of spinal or regional anesthesia is not greater, and is probably less, than that of inhalation anesthesia; secondary mortality, as it is administered at the present time, is *nil*. For these reasons, spinal or regional anesthesia should be the method of choice, and if I were to prophesy, I would say that inhalation anesthesia in general will be in a class with chloroform ten years hence and spinal or regional will be the anesthesia of choice."

P. R. Denman says: "There seems to be some fear of spinal anesthesia among the members of the surgical profession, who are unfamiliar with its use, while its adherents have an even greater dread of inhalation anesthesia. There is a third class of surgeons who see its many advantages and are endeavoring to take advantage of them. No one can realize this better than the author, whose opinion is formed from numerous letters and inquiries. From these letters, personal remarks and questions, I have selected the most important and will answer them as far as possible.

"I am afraid of the great drop in blood pressure; except for that, I believe it to be an ideal form of anesthesia."

The drop in blood pressure is produced by using improper anesthetic drugs and by permitting the solution injected to extend high in the spinal canal.

This can be prevented by using drugs that do not act severely upon the vasomotors: novocain or procain; by not permitting too great amount of spinal fluid to escape; by preventing dissemination within the spinal canal; by confining the anesthetic to the lower spinal canal; by stimulating the vasomotor constructors with strychnin within the canal and by ephedrin in the tissues.

"Does it not have a great effect upon the respiratory and heart centers?"

Not unless it reaches high in the spinal canal. It never affects respiration or the heart if confined below the sixth or seventh dorsal vertebra.

"Don't you often get paralysis following its use?"

Paralysis is a legend of the early days of its use; large, 16- or 18-gauge were used, severing or traumatizing fibers of the cord, or producing localized intradural hematoma.

"How large an amount of the drug may be used?"

Ordinarily, three grains of novocain, which can be repeated, or as much as six grains of novocain may be used with safety.

"What causes the pallor and vomiting?"

It does not occur with a proper technique. The pallor is caused by extreme drop in blood pressure due to high extension within the spinal canal. Vomiting is caused by cerebral anemia due to high extension and drop in blood pressure and rough handling of the abdominal viscera.

"What causes the post-operative headaches?"

They should not occur, and if they do it is due to you and not the anesthetic. It may be due to: the use of large needles; post-anesthetic seepage; withdrawal of too much spinal fluid; extension of anesthesia high within the spinal canal; the use of butin or apothesine.

In an endeavor to solve these questions, a series of tests were conducted to ascertain the diffusibility of a solution of novocain in spinal fluid when re-injected into the spinal canal, and to place this anesthesia under control of the operator, to prevent uncertainty as to the parts involved, to stabilize the intensity and regulate the time of anesthesia, to

minimize nausea and vomiting, to diminish the tremendous drop in blood pressure, to abolish the cold sweats and anxiety of the patient, and to eliminate systemic disturbances.

To gain control, a solution of higher specific gravity than the spinal fluid or a viscid solution must be used. In P. R. Denman's experimental work upon the cadaver and live subjects, he found that a solution of novocain in spinal fluid, one and one-half grains of novocain to each cubic centimeter of spinal fluid, has a specific gravity of 1025. It is most important to use a solution of the same specific gravity in every case, for the reason that the control is largely dependent upon gravity and diffusibility, which is controlled by position of patient. The results obtained by injecting cardiac and vasomotor stimulating drugs before and during anesthesia intramuscularly, intravenously and intradurally, eliminated all but strychnine, ephedrin and suprarenin as having any immediate and direct action upon the vasomotor constrictors and as an aid in maintaining a normal blood pressure. The blood pressure, nausea, vomiting, pallor and sweating were found to be in direct ratio to the intensity and number of vasomotors involved.

There is frequently a temporary and marked drop in blood pressure due to fear, nausea, and vomiting, which should not be confused with the drop in blood pressure caused by intensity of the anesthesia or high involvement in the spinal canal.

The physiologic action of the drugs used in spinal anesthesia varies greatly. Stovcain produces the most intense anesthesia, and as the anesthetic is subsiding it often produces severe pains in the lower limbs and headaches lasting for several days. Tropacocain produces anesthesia not unlike stovcain. Apothesine gives a perfect anesthesia and complete relaxation. Primarily, there is very little vasomotor disturbance. Secondarily, one or two hours after injection, it produces a severe vasomotor disturbance. Cases have been observed with a ten- or fifteen-point drop in blood pressure forty minutes after injection, and two hours after injection the pressure had dropped to zero. At times it is impossible to elevate the patient's head for twenty-four hours after administration. The use of cocain, stovcain, tropacocain and apothesine has been responsible for many of the alarming symptoms following spinal anesthesia. They are dangerous drugs to use.

Novocain gives a complete anesthesia of the sensory nerves, satisfactory relaxation, and only slightly affects tactile and muscle sense. It affects the vasomotors less than any other drug used. Novocain is the safest and most satisfactory drug to use; it never leaves the slightest after-effects, the color rarely changes; only a very slight, if any, drop in blood pressure; nausea and vomiting is greatly diminished. It can be used in doses ranging from one to six grains with absolute safety, giving complete anesthesia from forty minutes to three hours, can be used in the young as well as the old. For all operations below the diaphragm, spinal anesthesia is the most rapid, convenient, practical, reliable, and safest form of anesthesia. This perhaps may be a broad statement, but when one considers (and I believe it is conceded) that ether by the drop method is believed to be the safest inhalation anesthetic, and yet that ninety-five per cent of the mortality with either anesthesia is secondary and post-operative, through producing pneumonia, lung abscess, ileus, acidosis, suppression of urine, or dilatation of the stomach, it must be remembered that these are unknown sequels to spinal anesthesia.

Doctor Polak, in a recent report on eclampsia before the American College of Surgeons, stated: "Inhalation anesthesia is a great contribution to the increased mortality, and whether delivery is to be made by cesarean or instrumental aid, spinal anesthesia is the only form to use, and by using this the mortality is decreased thirty-one per cent over the mortality of inhalation anesthesia." Spinal anesthesia in general peritonitis and intestinal obstruction will reduce the mortality more than fifty per cent over the mortality of inhalation anesthesia.

Doctor Babcock has a mortality of three and one-half per cent. Many advise against its use in acute conditions within the abdomen. This is erroneous. If it is once used it will never be abandoned. It relieves the rigidity, reduces distension, collapses the intestines, stimulates peristalsis, and relaxes the sphincters; not infrequently, a case of general peritonitis with constipation for days will have an evacuation on the operating table.

The injection of camphor, digitalis, caffein, or other cardiac stimulants will not overcome the drop in blood pressure. One cubic centimeter of a three per cent solution of ephedrin in the tissues or in the vein is the most efficient, quick-acting, reliable and lasting preparation that we have to maintain the blood pressure or to bring it up, almost instantly, in emergencies. Its action may be relied upon for two or three hours after injection. It is superior to suprarenin because the effects of suprarenin are little, if any, unless injected directly into the vein. In the

tissues suprarenin produces ischemia, and is confined locally; in the veins, either alone or with normal saline, suprarenin gives prompt and effective results; but its effects are of short duration—not more than fifteen or twenty minutes. If the blood pressure is to be maintained, reinjections have to be resorted to.

The technique used by the authors was developed by the brother of one of them, P. R. Denman, of Houston, Texas, who has used the following technique in more than one thousand cases. It is simple and safe and is as follows: "One hour before operation the patient is given morphine grains ¼, hyoscine grains 1/200, subcutaneously; children in proportion. The patient is placed on operating table and turned on side, knees and head flexed. In all operative procedures below the umbilicus the table is placed in five degrees reversed Trendelenburg position, and in all upper abdominal procedures below the costal margins the table is placed in a horizontal position. The skin over the back is painted with iodine. Epedrine grains 2/3 is given in the muscle, and with a twenty-five gauge sharp-pointed needle, one inch long, the skin and integument down to the interspinous ligament is infiltrated with one or two cubic centimeters of a one per cent novocain solution, between the second and third, fourth and fifth spinous process. The wheal in the skin is massaged and puncture is done with a twenty-two gauge lumbar puncture needle of nickeloid or rustless steel, the point of which is ground off to a taper of forty-five degrees, one-half with a cutting edge and the other half rounded. This cuts a miniature trap-door in the dura which closes tightly when needle is withdrawn and prevents seepage of the spinal fluid. I enter the canal between the second and third lumbar vertebræ at right angles to the spinous processes, and withdraw one cubic centimeter of fluid to each one and one-half grains of novocain. To this solution is added strychnin sulphate grains 1/32. This mixture gives a solution which has a specific gravity of 1025, which, with the patient in five degrees Trendelenburg, will diffuse caudalward. The patient is then turned on back and the operative field prepared. In ten minutes eighty per cent of the novocain becomes fixed and the patient can be placed in full Trendelenburg position, if so desired, with perfect safety. No spinal fluid is allowed to escape, for should a large amount be lost there is a possibility that the anesthesia will extend higher than is desired. In all upper abdominal procedures the table remains in a horizontal position while the injection is being made.

We would like to pause here and give reports from a few men doing spinal anesthesia. These have been gathered from the literature:

1. Daniel A. Orth—1,400 cases. One death, due to defective solution and rapid absorption.

2. Jacob Saroff (New York)—100 cases. No deaths.

3. Thomas Jenesco (France)—6,200 cases. No deaths.

4. Dr. P. R. Denman (Houston, Texas)—7,500 cases. No deaths.

5. Dr. Babcock—8,000 cases. 3½% mortality

6. Dr. J. A. Guthrie (Huntington, W. Va.)—75 cases. No deaths; no serious complications. One case of shock, supposedly due to anesthesia. Two cases where no anesthesia was obtained, due to faulty technique in doing spinal anesthesia.

In conclusion, we do not desire to imply that you should employ spinal or regional anesthesia, but today, when spinal and regional anesthesia has been developed to the point of safety which it now enjoys, if you do use it you will have one of the safest anesthetics, and an anesthetic that will not give you troublesome after-effects such as nausea, vomiting, gas distension, acidosis, pneumonia, and innumerable other after-effects of inhalation anesthesia. Another thing which must be borne in mind by all of us is the patient. We must remember that the patient today is becoming enlightened and educated in anesthetics as well as other surgical procedures, and we are more or less public servants here to serve the public to the best of our ability and to its liking. The surgeon ten years from today (perhaps much sooner) who is not a master of the technique of spinal and regional anesthesia is not going to enjoy that good clientele as does his competitor across the street who administers all of these forms of anesthesia. There is not an operation upon the human body that can not be performed with greater facility with spinal or regional anesthesia than with inhalation anesthesia, and the post-operative complications and dangers must always be borne in mind.

Spinal anesthesia is adaptable in all classes of cases, be the blood pressure high or low, the patient young or old, fat or thin, cardiac, nephritic, alcoholic, or addict.

In cases of extreme shock from hemorrhage or in extremely ill patients, regional block anesthesia should be employed in preference to any other form. Spinal is the safest form of anesthesia we possess for operative procedures below the costal margin.

Ephedrin and suprarenin are the only drugs to be relied upon in an emergency. Do not waste valuable time experimenting with other stimulants.

Watch spinal and regional anesthesia increase in popularity for the next ten years.

EVOLUTION OF THE PRESENT KNOWLEDGE OF THE TREATMENT OF GOITER *

By STUART MCGUIRE, M.D.
McGuire Clinic
Richmond, Virginia

The problems which confront a surgeon change with each succeeding generation. When I began the practice of medicine the subject of appendicitis held the center of the stage. The pages of medical journals and the programs of medical meetings were almost monopolized by papers on the various questions with reference to its treatment. Was appendicitis a medical or a surgical disease? Should an operation be done after diffuse peritonitis had developed? Should the surgeon simply drain, or should he attempt to remove the appendix in a case where a large local abscess had formed? These and many other questions have now been settled and are only of historic interest. The treatment of appendicitis has been so standardized that at present it is rarely discussed, and I sometimes wonder whether the older surgeons are adequately transmitting their dearly earned experience to the younger generation.

With the exhaustion of interest in the appendix, the surgical mind turned to the thyroid, and goiter is now the popular subject of discussion. It is true that diseases of the thyroid were recognized and described by the earliest medical writers, but their frequency and imporance were not appreciated until the introduction of anesthesia and antiseptics enabled modern surgery to offer relief to its victims.

Many interesting and some dramatic contributions have been made to the knowledge of physiology and pathology of the thyroid gland, but it must be confessed there is much yet to be learned. Today, eminent authorities hold divergent views, and experienced and conscientious practitioners advocate different methods of treatment. Until the various theories are reconciled and the apparently contradictory facts are explained, the study of the gland must be continued. We are now in the same stage of evolution in our knowledge of goiter that the profession went through some thirty years ago in its knowledge of appendicitis.

The history of the pioneer work in the surgery of the thyroid gland is of great interest. The great Kocher's mortality in his first seventy cases of simple goiter was 40%, and Charles H. Mayo's mortality in his first sixteen cases of exophthalmic goiter was 25%. These and other men, with a courage that today seems marvelous, persevered in their work until they finally perfected a technique which enables the surgeon of the present day to operate with a mortality of less than 2%.

After the first enthusiasm over this surgical triumph there naturally came a reaction. Was it necessary to do a mutilating operation to lessen the bulk or reduce the physiological activity of a perverted gland? Was it not possible to shrink the gland and lessen the secretion by other less heroic treatment?

The medical measures at first employed were empirical and consisted of prolonged rest in bed, the administration of drugs such as digitalis, belladonna, and hydrobromate of quinine, the use of various sera such as the one obtained from the blood of a thyroidectomized goat, the injection of alcohol, carbolic acid and boiling water into the gland to produce a sclerosis, the application of electricity in the form of electrolysis and cataphoresis, and radiation of the neck with x-ray, and the treatment of the gland with radium or its emanations.

While some of the above measures proved of benefit in selected cases, the final result was not satisfactory, hence the experimental method of treatment was abandoned and a scientific study of the physiology and pathology of the gland was undertaken to try to find a specific remedy for the cure of its disorders.

It has been learned that the thyroid gland has many functions, the most important of which, perhaps, being the regulation and control of metabolism or chemical changes that go on in the body. The human body may be compared to a furnace, because it consumes fuel and produces heat and energy. The process by which a furnace converts coal into heat and energy is called combustion. The process by which the human body converts food into heat and energy is called metabolism. All modern furnaces have automatic dampers or thermostats by which the degree of combustion is regulated and the amount of heat produced is controlled. Similarly, the human body has a delicately adjusted

---

* Read before the Kanawha Medical Society at Charleston, West Virginia, by G. H. Barksdale, M.D., on December 18, 1928.

mechanism by which the degree of metabolism is regulated and the amount of heat produced is controlled. Owing to this fact, man has a normal temperature of about 98.6° F., and this is maintained in health with practically little variation, irrespective of the time of meals and regardless of whether he lives in the tropics or Arctic regions.

It has been proved that the internal secretion of the thyroid operates this human thermostat. An increase or decrease of thyroid activity is at once shown by a corresponding increase or decrease in the metabolic rate.

If thyroid secretion is excessive, the internal fires burn fiercely and the tissues are stimulated to a course of wasting dissipation. The patient in time develops tremors, sweating, rapid heart action, muscular weakness, loss of weight, and feverish mental activity. The evidence of thyroid excess suggests the entrance of tragedy into the life of its object.

If thyroid secretion is deficient the metabolism of the body is depressed and heat production and gaseous interchange are at a low ebb. In the young, growth is lessened and the skeleton is dwarfed. The nervous system halts in development and mentality does not rise above the level of that of an infant. Physically and intellectually the victim of thyroid poverty is less a man, more a beast.

It has been learned that the thyroid is peculiarly rich in iodine, and that the amount present varies widely both in health and in disease. The thyroids of sheep and oxen fed near the sea contain twice as much iodine as do those pastured in inland regions. Iodine is increased in colloid goiter, diminished in adenomatous goiter, and may be completely absent in exophthalmic goiter.

Ever since the demonstration of the presence of iodine in the thyroid, numerous investigators have endeavored to explain the rôle of its physiological activity and the nature of the chemical combination in which it is held. Starling states: "Iodine may possibly be the active principle by means of which the thyroid is able to maintain the nutrition of the body," and Crile writes: "The study of the thyroid begins and ends with iodine." Kendall isolated a crystalline substance from the thyroid which he called thyroxin. It contains 60% of iodine and its chemical structure is now known. It apparently possesses the same physiological action as does the gland itself.

Marine emphasized the fact that iodine is necessary for the normal function of the thyroid and that when the store of iodine falls below normal there is active hyperplasia of the gland. If when this occurs iodine is supplied artificially the hyperplasia ceases and the cells return to their resting form.

It has been demonstrated that the thyroid will become diseased, first, if it is not provided with sufficient iodine to manufacture its secretion; second, if it is overworked by an undue demand by the system for its secretion, and, third, if it is irritated by poisons brought to it by the blood from the teeth, tonsils, or other foci of infection. An underfed or overworked or chronically poisoned thyroid usually increases in size, and this enlargement constitutes what is generally known as a goiter.

Just as mercury was used empirically in the treatment of syphilis and quinine in the treatment of malarial fever before the physiological actions of the drugs were understood, so iodine was used empirically in the treatment of diseases of the thyroid in the form of sea water, sea salt, seaweed, juices of shellfish and the ash of sea sponges, before the element was known to the chemist. After the discovery of iodine and the demonstration of its presence in the thyroid in amounts that varied widely with different pathological conditions, it was only natural that its use should have been suggested as a remedial agent. Swiss and French physicians employed it largely in the form of iodid of potassium and claimed to cure or benefit many patients. In comparatively recent years Kocher and Halsted tested the effect of iodine on a large number of patients suffering with goiter. Some of the patients with simple or quiescent goiter developed acute and dangerous symptoms, and as a result Kocher cautioned the profession against the indiscriminate use of the drug in unselected cases. This led to a careful study of goiter in order to classify diseases of the thyroid clinically and pathologically and to determine the value of the various remedies advocated in their treatment.

This work has been much aided by the introduction of the basal metabolism test. As the thyroid gland regulates the general metabolism of the body an increase or decrease of its activity is accurately shown by corresponding changes in the patient's basal metabolic rate. Hence by determining the degree of metabolism it is possible to estimate thyroid activity in a given case, and to tabulate mathematically the effect of the various forms of treatment that are advocated for its abnormalities.

No perfect classification of goiter has yet been evolved. The simplest and most practical to cover

the cases that are most commonly met by the clinician is the following:

(1.) Colloid goiter.

(2.) Adenomatous goiter without hyperthyroidism.

(3.) Adenomatous goiter with hyperthyroidism.

(4.) Exophthalmic goiter.

Colloid goiters are soft in consistency, symmetrical in shape, and are characterized histologically by an excess of colloid in the acini of the gland. They do not cause an increase in general metabolism, and hence are not attended by constitutional symptoms. They usually develop about puberty and are much more common in girls than in boys. This type of goiter is endemic in certain sections and is then said to be a geologic deficiency disease due to lack of iodine in the organism, although the demands of physical growth, scholastic training and social pleasures must play a secondary part.

The work of Marine, Kimball, and others in the prophylactic and curative treatment of colloid goiter by the use of iodine is too familiar to require detailed description. By the proper administration of iodine to the pregnant mother and to the child until it maintains its growth, colloid goiters can be prevented, and by the use of iodine and thyroid extract combined with hygienic measures many cases of colloid goiter, after they develop, can be cured.

Adematous goiters without hyperthyroidism, or simple adenomas, cause enlargements of the thyroid which are usually unequal in consistency and irregular in shape due to the presence of new growths in the substance of the gland. They do not cause an increase in general metabolism, and hence are not attended by constitutional symptoms. They usually begin in early life and grow slowly, producing deformity and sometimes discomfort from pressure. In four cases out of five, after a period which averages about sixteen years, they undergo degenerative changes that transfer them from the simple to the toxic type. This change may be precipitated by the injudicious administration of iodine.

Adenomatous goiter with hyperthyroidism, or toxic adenomas, usually develop as a result of neglect of a simple adenoma. The cause or nature of the degenerative change which takes place in the adenomatous tissue is not known.

Owing to increased functional activity of the gland, there is an excessive output of thyroxin. In addition to the nodular enlargement of the thyroid there are constitutional disturbances such as nervousness, tremors, tachycardia, loss of weight and strength, and increase in the basal metabolic rate. The symptoms develop insidiously and in time may produce degenerative changes in the heart, kidneys, and liver. The patients do not have fluctuation in the intensity of symptoms or develop acute thyroid crises or have the eye changes which are characteristic of exophthalmic goiter. The administration of iodine does no good and may do harm in these cases.

Exophthalmic goiters are most common in early life, but they are sometimes seen in children and in patients of advanced age. The thyroid is moderately but symmetrically enlarged and microscopic examinations show diffuse parenchymatous hypertrophy and hyperplasia of the tissue. Chemical tests show in some a complete absence and in others a marked diminution of iodine in the gland. Owing to the pathologic changes present there is an excessive and probably abnormal thyroid secretion. The symptoms of exophthalmic goiter, unlike those of toxic adenomas, usually begin acutely and abruptly. In addition to nervousness, tremors, tachycardia, loss of weight and strength, and increase in the basal metabolic rate which are seen in toxic adenomas, there are exophthalmos, marked remissions and exacerbations in the intensity of the symptoms and a tendency to gastrointestinal crises of vomiting and diarrhea.

Until recently clinicians believed that toxic adenomas and exophthalmic goiters were merely different stages of the same disease, and as it was known that the administration of iodine was injurious in the first it was thought it was also contraindicated in the second. It remained for Henry S. Plummer, of The Mayo Clinic, to show that toxic adenomas and exophthalmic goiters were distinct and separate diseases, and to demonstrate that iodine was of inestimable value in the control of the symptoms of true exophthalmic goiters.

The administration of iodine in these cases causes quick and marked improvement, but the effect is only temporary and the symptoms soon return. After a patient has been treated with iodine and a relapse occurs, the case will not respond satisfactorily to further treatment with the drug. Iodine, therefore, should not be used as an attempt to cure, but merely as a means to improve the patient's condition so that other methods of treatment may be employed.

From the foregoing it will be seen that iodine is indicated in the medical treatment for the prevention and cure of colloid or simple goiter. Iodine is

contraindicated in simple adenomatous goiter, as it may activate the disease and bring on a dangerous attack of acute hyperthyroidism. Iodine does no good and may do harm in toxic adenomatous goiter except in the rare so-called mixed cases where there is an element of exophthalmic goiter present. Iodine should not be used by the physician in the treatment of exophthalmic goiter, as its beneficial effect is only temporary and the susceptibility of the patient to its action is permanently destroyed. The drug should be reserved for the use of the surgeon in his effort to get the patient in condition for a safe operation.

At one time the injudicious use of iodine by inexperienced practitioners did much harm. The profession as a rule now knows which type of goiter is benefited and which is harmed by its administration. The result of all this labor, however, threatens to be lost, owing to the recent widespread advertisement of a brand of table salt containing iodine, which is offered to the public as a panacea not only to prevent but also to cure all forms of goiter. The indiscriminate use of unknown quantities of iodine will unquestionably do much harm, and patients with potential or actual goiter should be warned not to prescribe for themselves a potent drug obtained from the corner grocery store.

So much with reference to the indications for iodine. Now, what about the indications for surgery? They, too, will be found to be dependent on the type of goiter. I have time to state them only very briefly.

Surgery should not be resorted to in cases of colloid or simple goiter, especially the adolescent form which occurs in young girls. This type of goiter is a comparatively harmless trouble and the symptoms it causes are more imaginary than real. The enlargement of the gland usually disappears in a reasonable time with or without treatment.

Surgery is indicated in simple adenomatous goiter if the growth causes deformity, or if it gives rise to pressure symptoms, or if it shows evidence of undergoing degenerative changes. Usually, the patient is the best judge as to when the disfigurement or discomfort is sufficient to justify an operation.

Surgery is indicated in toxic adenomatous goiter as soon as the symptoms due to chronic hyperthyroidism become marked. This type of goiter does not tend to spontaneous cure or yield to nonoperative treatment, and delay leads to incurable structure changes in the heart, kidneys, and other vital organs.

Surgery is indicated in exophthalmic goiter as soon as a positive diagnosis is made. It is now generally recognized that surgery is the quickest, surest and safest way to cure the disease. An early operation is attended by practically no mortality, avoids weeks of invalidism, and prevents the bulging of the eyes, which is a deformity that often can not be corrected by a late operation.

If this golden opportunity is lost, and medical treatment is instituted in an effort to avoid an operation, the patient eventually reaches the surgeon in a condition that makes the case a bad risk. This is especially true when iodine medication has been employed. Instead of an operation performed shortly after admission to the hospital, done comfortably under a general anesthesia and completed at one stage with closure of the wound, the patient has to undergo a more or less prolonged period of preparatory treatment, the operation has to be done under a local anesthesia, the work often has to be divided into several stages, and the wound frequently has to be left open and packed with gauze. Here, as elsewhere, early surgery is easy and safe and late surgery is difficult and dangerous.

THE SPECIALIST AND THE PROFESSION *

By E. LLOYD JONES, M.D.
Wheeling Clinic
Wheeling, W. Va.

The present field of general medicine is too large to be mastered in all its details by any one man. It is impossible for one man to keep abreast with the developments in and review the current medical literature published by the various departments of medicine and surgery, and, further, he can not purchase and maintain the equipment necessary to practice all the specialties. The practice of general or special medicine has as its function the welfare of the patient. In order to give the patient the full benefit in some of his ailments, specialization has become a necessity.

Specialism is a result of the needs of the time. To specialists we are responsible, in a large measure, for the great growth of scientific knowledge along their particular lines. A scientifically trained physician who devotes himself exclusively to one of the more restricted specialties is more competent to produce results in his chosen field than one not so

* Read before the Central West Virginia Medical Association at Buckhannon, West Virginia, on September 19, 1928.

specializing. Specialization is so well established that it requires no defense. The specialist is here to stay. He is an integral part of the profession in as much as the profession has produced him to meet its needs.

A specialist should be one who has had, besides the general foundation of a course in the modern medical college and sufficient work in general practice or hospital service to mature his judgment, a special training in the particular line chosen, to be able to do the majority of the major operations required if it be surgery, or, if in medicine, sufficient training to warrant the term *specialist*; he must limit his practice exclusively to his specialty. To define the general practitioner would require pages, hence I will say the general practitioners comprise that part of the profession who are not specialists. The majority of the profession is made up of general practitioners, but this majority is diminishing rapidly. On the average, one out of four is a specialist. The problem, then, is to limit the number of specialists and to use properly the ones we have.

The New York health commissioner in 1925 said, "No more important problem confronts the people of this state and nation than that of regulating the practice of specialties and restoring the number and prestige of the general practitioner," and he further suggests the means of so doing: the state should prohibit the practice of a specialty (including surgery) until a physician has practiced general medicine for a term of not less than five years and has qualified himself by training and experience according to established standards required for the competent practice of the particular specialty which he desires to undertake.

Time was when, after a four-year course in medicine and surgery, a man was considered capable of entering the practice and doing the operations required. The law still exists as such in many states; at least he is given the right. Some states are requiring one year interneship before granting this privilege. We know a man is not capable of doing justice to the patient in surgery, at least, until he has had some experience. Where can this experience be obtained? Either he gets this at the expense of the patient or takes some work in the hospital or its equivalent of an apprenticeship with one of experience. This, you know, is not required by law. In all justice to the trusting patient, who knows no better, and in justice to the medical profession as a whole, in whose trust the public is wavering, as evidenced by the growth of the cults, the aspirant to the knife should be required to have training.

The question is to regulate by law, as mentioned above, from without or from within. There are serious attempts to regulate the specialists from within, as evidenced by the growth of such organizations as the American College of Surgeons, the American College of Physicians, American Academy of Ophthalmology and Otolaryngology, and others, all of which require certain qualifications, examinations, and years of practice to be entitled to membership. This regulation will not protect the public from the "self-called" specialist without training. The public does not have the same facilities to look up the training and affiliations with the national societies as does the profession. I feel that the regulation should be from within. This requires the coöperative efforts of all. Consult the specialist who has the training and the affiliations, thereby discouraging the unqualified man until he meets these requirements.

You probably have heard of "organized medicine." Is it organized medicine when one half of the special cases requiring study by a specialist are not referred? How often do we see a patient who can afford it go the round, treated piecemeal by one specialist after another, fail to find relief from the many symptoms for which the general practitioner or clinician, properly selecting his specialists, can furnish effective advice and treatment? Patients going direct to the specialist means that they are attempting to diagnose their own cases. This partly accounts for the popular appeal of the cults, who propose to treat all by one method. It also throws unnecessary work on the specialist when this examination is not indicated. When it is indicated, as treatment proves, the patient suspects the judgment or integrity of the physician who should have referred him and did not. It is "disorganized medicine" that we have. It can not be very long before the force of circumstances must cause the medical profession to be an army instead of a mob of individualists. The rapid growth of group practice manifests the proper coöperation of specialists and clinicians. Teamwork in all difficult medical problems must be superior to individual examinations

Dr. L. F. Barker, of Baltimore, said: "If we are to supply the public with the medical and surgical service that modern science has made available, we must, in addition to the work of the general practitioner, have the coöperation of experts in more limited fields." The ideal plan is one which will utilize the investigating zeal of a group of specialists who are subservient to and acting as aides to a

master clinician. Dr. Joseph Beck, of Chicago, insists that the group system makes for better diagnosis, improves the treatment of the patient, economizes time for the patient and the doctor and incidentally results in more scientific attainment. We have the choice of state medicine (God forbid!), group practice, or sensible coöperation of the profession—general practitioners and specialists.

The patient's interest and physical welfare is the paramount issue in the professional duties of the doctor in his dealing with his confrères as well as with his patients. There must be a willingness on the part of the general practitioner or clinician to refer a patient to a specialist whenever he is in doubt of the diagnosis or condition, or whenever he knows conscientiously that he can not serve the patient as well as the specialist and especially when such is easily available, and this should be done early enough to prevent serious complications and save the patient unnecessary suffering and expense. The specialist is usually cheapest in the long run. The general man may ask simply for an opinion or a consultation and the patient is returned for treatment, or, when the general practitioner is unable to treat the case, the specialist must be free to handle it. The general practitioner has enough to do without coming over into the specialties. The specialist, on the other hand, should not handle anything but that restricted to his specialty, and should refer other questions of diagnosis and treatment to other doctors who regularly handle this class of work.

The general practitioner should guide the patient in the selection of the specialist, bearing in mind that he has the welfare of the patient at heart. In this respect, may I say that many general practitioners do not differentiate the oculist or the ophthalmologist from the optician or the optometrist? It is just as unethical for a doctor to send his patient to an optician or an optometrist for refraction of the eyes as it would be for the eye, ear, nose and throat specialist to send his patients to the chiropractor or other cultist for study or treatment of nephritis or diabetes. Speaking for a few minutes upon my own specialty, what symptoms would require investigation by an eye, ear, nose and throat doctor? Let me briefly give some:

1. Headaches—Par excellence! Any headache that persists over one month and is not amenable to treatment of the apparent cause certainly should make the attending physician think of refractive error, sinus disease, intracranial tumor, or foci of infection.

2. Disturbance of vision.—If not due to corneal involvement, calls for an *immediate* ophthalmological examination. How many blind eyes are there which have had iritis and were treated for conjunctivitis, or glaucoma treated for iritis?

3. Nasal discharge, with or without pain in the face or over the eyes, with or without odor, persisting after the usual treatment for a cold, should indicate the possibilities of sinus disease. The general practitioner should be able to make an ordinary inspection of the nose and possibly transilluminate the sinuses. (Rubber in the nose.)

4. Vertigo.—Dizziness, when persisting for some time, calls for a thorough investigation of the semicircular canals and the eyes for brain tumor, and especially if associated with deafness in one ear.

5. Patients having chronic arthritis, nephritis, myocarditis, asthma of the infection type, or any symptom or disease attributable to foci of infection, should be referred to the head specialist for examination. The majority of the foci of infection are located in the head, *viz.*, teeth, tonsils, sinuses, and ears.

6. Hoarseness or dysphasia that persists after several weeks of the usual treatment must be considered due to tuberculosis, syphilis, or malignancy of the larynx, and the patient should have an early laryngoscopic examination.

7. Cough, with or without expectoration, when it persists beyond a reasonable time under treatment, often means chronic sinusitis, adenoids, hypertrophied lingual tonsil or other localized cause in the nose or throat. The cough of chronic bronchitis or bronchiectasis, most commonly due to chronic sinusitis, has often been mistaken for the cough of tuberculosis and patients have been sent to the sanitarium without an examination by the head specialist.

8. Stomach disorders, nervousness, and insomnia are often associated with refractive errors.

9. In children, especially, any ear pain, temperature or convulsion makes the attending physician suspicious of acute suppurative otitis media, and in the presence of such discharging ears a dehydrating enteritis often means mastoiditis.

10. In the routine or periodic health examination of patients the general practitioner must consider that an ophthalmoscopic examinaion of the eyes will show any changes in the condition of the blood vessels much earlier than elsewhere, because they can be seen as though dissected and lying free. A look at the tonsils is insufficient. The worst tonsil

may be inconspicuous and only by expressing it may the pus and its character be determined.

Symptoms similar in importance could be named for all of the specialties. I do not wish to make you feel that all your patients should be sent to the specialist, but I do mean that after a reasonable time, during which all available methods of diagnosis and treatment have been used and have failed, the patient should be referred to the specialist or group of specialists for study.

The specialist should endeavor, by attending and participating in his local, state and national medical society meetings, to assist the general practitioner. Assist him in showing him, whenever possible, how to examine his patients and properly to evaluate the symptoms. The general practitioner, after being in practice for several years, is not in touch with the advances in the special fields, and it is only in this way that he can keep abreast of the times.

The specialist is not the whole show. The general practitioner is the backbone and foundation of the medical profession. We rise or fall with him. He has established, maintained and sustained the honor and glory of the American medical profession for more than a century, and he will continue to do so.

THE GALLBLADDER AND SOME OF ITS COMMON DISEASES *

By CARL C. ROMINE, M.D.
Morgantown, W. Va.

In this discussion of the gallbladder and some of its pathological conditions, I will endeavor to bring before you some theories advanced as to the normal functions of the gallbladder and to show that minor changes in the normal function of this organ produces some of its most common diseases.

The reason I chose this subject for my discussion was not because I expected to throw some new light on the normal function of the gallbladder, as to how it empties itself, or change all the theories advanced as to its concentrating power, but rather to bring before you some of the untiring work done by some of the greatest investigators in trying to determine the normal function of this organ, as well as the treatment of some of its most common diseases.

I know of no other organ in the human body that has been experimented on more during the last few years than the gallbladder. From this vast experimentation have arisen great differences of opinion in regard to the normal function of the gallbladder, and to the treatment of gallbladder disease, but more to the former than the latter.

The most common belief among the profession is that the gallbladder, under normal conditions, acts as a reservoir for bile, and that it concentrates bile. Some think it also secretes a specific secretion, regulates intrabiliary pressure, and contains a hormone.

Mann states that the most recent investigations have proven at least one function, *viz.*, concentration of bile; and that it plays a rôle in the regulation of intrabiliary duct pressure.

Hohlweg found the normal gallbladder's absorption of water was so great it could concentrate the bile secreted during the intervals between digestion, so that 40 c.c. of bile found in the gallbladder represented from 240 to 400 c.c. from the liver. Rous and McMasters found the pigment content of each cubic centimeter of bile in the normal gallbladder may be ten times greater than that in the bile secreted in the ducts. This is proof that the gallbladder concertrates bile.

The differences in character of the bile secreted by the liver and that found in the gallbladder led Kemp to suggest that the bile secreted from the liver was concentrated in the gallbladder. Caylor and Bollman found, in experimental acute specific cholecystitis, that this concentrating activity is diminished in proportion to the extent of the pathologic changes.

Mann and Bollman ligated the common bile duct in dogs and observed that signs of icterus (bile pigment) in the blood, urine, sclerotics and mucous membranes did not develop for from thirty-six to forty-eight hours after operation. By removing the gallbladder at the same time the common duct was ligated, however, bile pigment was definitely demonstrated in the blood and urine within three hours after the operation, and the sclerotics and mucous membranes were definitely yellow within twenty-four hours. (A very good point to remember in case the common bile duct becomes constricted after cholecystectomy.) By intravenous injection of chlorinated soda they induced specific cholecystitis and found that, where the entire gallbladder appeared to be diseased, jaundice developed as rapidly as in animals in which the gallbladder was removed and the common bile duct was ligated. Animals with milder disease of the gallbladder developed jaundice less rapidly, and those with but slight disease developed jaundice at the same rate as normal

---

* Read before the Harrison County Medical Society at Clarksburg, West Virginia, on December 6, 1928.

animals following ligation of the common bile duct. These facts clearly demonstrate that the gallbladder's function of concentrating the bile is impaired or may be totally lost if the organ is acutely inflamed.

Emptying of the Gallbladder.—Potter states that the gallbladder should not be viewed as an actively functioning organ which rhythmically fills and empties itself under the stimulus of digestion. Burget says the gallbladder as an active organ does not seem to enter into the physiology of the bile excretion, but the outflow from the gallbladder appears to be in the nature of an overflow incontinence.

Some believe there is a specialized neuromuscular relationship existing between the gallbladder and the sphincter of Oddi, which controls the emptying of the gallbladder. But Berg, of New York, has experimented on the relationship between the gallbladder and the sphincter of Oddi in the emptying of the former, and found, after complete division of the common duct and transplantation of the proximal segment distal to the sphincter of Oddi, relatively normal cholecystograms were obtained in dogs, and he concludes that a specialized neuromuscular relationship between the gallbladder and the sphincter of Oddi was excluded. This is questioned by some, due to the muscular fibers which are hard to differentiate around the sphincter of Oddi and those in the duodenal wall.

Boyden, in a recent article concerning the prevalent denial of functions long attributed to the gallbladder, states as follows: Two radical conceptions of the gallbladder have received considerable emphasis in recent years with negation of function; first, the denial that the gallbladder plays any significant rôle in digestion (some authors go so far as to assert that no bile which enters the gallbladder ever leaves it by way of the cystic duct), and, second, the assertion that the gallbladder is a passive organ, and that in so far as bile leaves the reservoir it is expelled by extrinsic agencies (or the elastic recoil of enclosing walls) and not by the contractile force of the gallbladder musculature itself. The first of these is no longer tenable and the second is fast succumbing to assault.

He further states it is generally agreed among the profession that no one ever sees the human gallbladder contract during an operation; but this is due to the lack of sustained stimulus for contraction. As the stomach and duodenum contain no food, and the chilling, deep ether anesthesia and handling inhibit rhythmical contractions of the gallbladder. He claims that, under local anesthesia and five minutes after the administration of magnesium sulphate, contractions of the human gallbladder can be seen. Therefore, his views are that the gallbladder actually empties its bile into the cystic duct by its own muscular contractions.

The normal gallbladder empties part of its contents through the cystic duct into the common duct, thence into the duodenum, during digestion. This active emptying period in dogs has been found by Hamrick to be usually short and could be definitely limited over a varying period. Emptying began ten to forty-five minutes after feeding, and was interspaced with varying intervals when there was none. The contraction of the musculature of the gallbladder appeared to be the main factor in normal emptying, and intrinsic periodic contractions appear to be important factors brought into play with digestion. Still, there is some question as to whether the normal gallbladder has the power to function as above stated; nevertheless, it is a subject for further study and one of great interest.

Etiologically, gallbladder disease was previously thought to be due to typhoid fever. Reports from clinics show that only about fourteen per cent of gallbladder disease give a history of typhoid fever. Therefore, new fields have been sighted and some of the former theories are about to crumble or be pushed from the pedestal by newer ideas. I do not think any of the profession deny that gallbladder disease is often caused by typhoid fever; but they do deny that all infectious gallbladder disease is due to typhoid fever bacilli.

Other pathological conditions are also thought to have a predisposing effect on gallbladder disease. Infections may arise from various causes, such as influenza, diphtheria, scarlet fever, appendicitis, or other infectious or contagious diseases. Typhoid fever is becoming less frequent each year, and we hope it will soon be eradicated from our midst. Although our gallbladder diseases are with us in large numbers, they are probably on the increase rather than on the decrease.

Influenza, having been our most prevalent infection during the past few years, has caused our death rate to markedly increase. Therefore, it seems reasonable to believe that this infection may be one of the principal causes of gallbladder disease.

In cholecystitis, according to Potter, stagnation of the bile in the gallbladder is the main predisposing cause of infection, and acute infection of the gallbladder and cystic duct of a mild character

normally are accompanied by hydrops, which later disappears as the infection subsides. Heister's valves of the cystic duct are swollen, due to edema of the mucous membrane of the duct, which, no doubt, is the causative factor in producing hydrops.

In the strawberry type of gallbladder the pathological condition is thought to be a meabolic derangement, as it is found most often in the obese individual. In cases of marked obesity, about seventy-eight per cent of those operated on for gallbladder disease have fatty changes which can be seen grossly in the gallbladder wall. Pregnancy seems to have a direct bearing upon this type of disease, and the percentage increases as the number of pregnancies increase. The high frequency of cholesterosis of the gallbladder in women, which amounts to about eighty per cent of all cases of this type of disease, points more to a metabolic disturbance than to any other cause. Its frequency where pregnancy has existed one or more times shows conclusively that pregnancy does have some bearing upon this disease. It has been found that about sixty-five per cent of these cases in women have been those who have borne. The greatest number are between thirty-five and forty years of age. The most of these complain of their first symptoms beginning with their first pregnancy. Ninety-nine per cent of stones in this type of gallbladder disease belong to the cholesterin group, and about one half of the cases of cholesterosis have gallstones. There does not seem to be any appreciable difference in the symptoms, such as pain, indigestion, or nausea, whether stones are present in the gallbladder or not.

Many still believe that gallstones practically never occur during the first decade of life, and but rarely in the second. It is believed also by some that they are infrequently found before the thirtieth year, and that after this period of life they become progressively more common with the oncoming years. There has been somewhat of a change in the last few years in the time of onset, as shown by Hektoen and Riesman. They found that twenty-five per cent of all cadavers at outopsy contained biliary calculi after the sixteenth year. Mathews thought at least one half of the patients upon whom he had operated for gallstones were under thirty years of age.

It is impossible, from the statistics, to determine acurately at just what age biliary calculi are formed, but from the literature on this subject such calculi have been found at practically all ages, ranging from a six-month-old fœtus to eighty-six years of age.

Mann and Wilson, in a study of fifty-seven cases of chronic gallbladder disease in young adults operated on in the early stages of the infection, found that more than ninety per cent were under thirty-five years of age. Starr also states that, in over thirty-six per cent of cases under observation, there was a history of biliary attacks before the age of twenty-five years.

From reports of large numbers of cases from hospitals and clinics, the average age in gallbladder disease is thirty-six years in women and thirty-nine years in men. The duration of symptoms varies greatly, but the average in women is six years and in males five years from the first symptoms to the time of operation. The shortest and longest duration from the time of first symptoms to the time of operation were three hours to fifty-four years, respectively. It is interesting to note that colored people are not affected with gallbladder disease as much as the white race, but the cause is unknown.

Symptoms of gallbladder disease which are most commonly found in the acute gallbladder are respiratory embarrassment, which is more pronounced in gallstone colic and is greater in cases where the blocking of the cystic duct is present. There is generalized abdominal pain and tenderness below the right costal margin and over the fundus of gallbladder, passing toward the epigastrium and toward the right subscapular region. Rigidity over the right hypochondrium, nausea, vomiting, and prostration, increased temperature, and restlessness, are symptoms which vary in accordance with the severity of the disease and are present in acute gallbladder infection, but many of them may be altered or be entirely absent in the more chronic forms of gallbladder disease.

At this point of the discussion I wish to mention a condition which is sometimes found, and which in some ways resembles gallbladder disease. This is termed "pseudo gallbladder symptoms," according to Carnett, and is often mistaken for gallbladder disease. He states that pain and tenderness of the upper right abdomen is often an intercostal neuralgia and is very similar to and can easily be mistaken for gallbladder disease. The anterior abdominal wall is supplied entirely by the sixth to twelfth intercostal nerves and first lumbar nerve. The sixth to tenth right intercostal nerves supply the right upper quadrant of the anterior abdominal wall. Pain in this region, produced by irritation of these nerves, from any cause, either acute or chronic, may resemble very closely an acute or chronic gallbladder lesion, especially when the history of indigestion, jaundice,

or a palpable gallbladder is negative. In other words, it is similar to gallbladder disease only from the standpoint of the pain it produces.

An exacerbation in neuralgia symptoms may be anticipated during the first four or five days after a biliary operation, which is probably due to an over-extension of the spine on the operating table. Recognition of excessive post-operative pain and tenderness, according to Carnett, due to parietal neuralgia, will save undue anxiety during the first few days regarding a possible beginning diffuse peritonitis, and later will save the patient from being classed as a neurotic.

Chronic inflammation of the gallbladder and appendix, incident to advancing age, occurs with such frequency that it should be regarded as an almost universal finding beyond middle life. Charles H. Mayo states, in a paper, that there are few necropsies on persons aged forty or over in which the appendix is normal, and that the same holds true for the liver and the gallbladder. These facts are known generally in case of the appendix, but are largely ignored in case of the gallbladder.

From a diagnostic viewpoint, the history and physical findings are very important. It is found that about eighty to eighty-five per cent of gallbladder diseases are diagnosed properly by these methods. It is the borderline or vague case of gallbladder disease, however, which is hardest to diagnose, and from this difficulty is brought to us the Graham-Cole technique which has been the greatest boon for the diagnosis of gallbladder disease ever produced. From this test good results are expected in most cases where gallbladders are full of stones, and in most cases of acute and chronic cholecystitis; also in those which have obstruction of the common bile duct. Nevertheless, there are still about thirty per cent failures from this technique in all types of gallbladder disease examined.

The laboratory plays its part in helping to diagnose these pathological conditions of the gallbladder, but this part of the diagnosis will be left to discussion by pathologists and laboratory technicians.

Treatment of Gallbladder Disease.—The medical treatment, according to Snell and Weir of The Mayo Clinic, is of little value. They state that the medical treatment of diseases of the biliary passages by diet, duodenal drainage, cholagogues, and biliary antiseptics, is unsatisfactory at its best, and in many instances may do actual harm by postponing the adoption of radical surgical measures.

The greatest need is for some remedy which would empty the gallbladder itself. Magnesium sulphate, egg yolk, oleic acid, and other substances have been reported to possess this property, but experimental proof of their efficiency is not completed and their clinical application has been somewhat disappointing.

From a surgical viewpoint the treatment of gallbladder disease varies greatly. Many believe the pathologic gallbladder should be drained only in acute infections of the gallbladder, while others believe the gallbladder should be removed entirely to rid the body of any existing focal infection which may remain or to prevent the formation of recurring calculi.

Those in favor of drainage only in this type of case seem to get the best resuls and the lowest mortality rate, although these acute cases are the ones in which we get the poorest results and the highest mortality of any of the gallbladder diseases (with probably the lone exception of carcinoma). Patients with acutely infected gallbladders are patients who are acutely ill and not good operative risks. The infection may be due to a localized infection of the gallbladder superimposed upon some other systemic disturbance such as diabetes, tuberculosis, or some of the anemias. Nevertheless, they are cases that often will not withstand much handling. If more radical treatment is done you will be more likely to lose these patients than if a simple cholecystostomy is performed. Even the acutely inflamed gallbladder case without any other systemic disturbance is best treated in the above manner. If a more radical procedure, such as cholecystectomy, is done, you may run into many disturbing factors. You may find many adhesions around the gallbladder which are hard to break up, and when you try to remove the peritoneal covering of the gallbladder it will tear very easily and bleeds freely. Supposing the gallbladder can be freed from its adhesions, the removal may be very difficult, as clamping off the cystic duct and artery, which will probably have to be done with one ligature. You will find, after removal, that the inflamed tissues may have slipped through the lgiature, and you will notice the end of the cystic artery pumping down deep in your field of operation. Then, in your haste, when you try to pick up the end of the artery, damage may readily be done to the common or hepatic ducts, which will give you plenty of anxiety for weeks to come. Oftttimes, while trying to remove gallbladders of this type, they are so friable that the least traction on

them will cause a tearing and separation from its attachment to the cystic duct and artery. I had one experience of this nature with a colored woman in the St. Mary's Hospital of this city a few years ago. Luckily, the gallbladder was so friable that it separated through the cystic duct instead of rupturing into the common duct (which it might have done), and the hemorrhage was controlled by packs, thanks to a good assistant, for they can give you moral support when you are greatly in need of it. The woman made an uneventful recovery, which was a great satisfaction to all concerned. This type of case being the acutely inflamed gallbladder, if removed it is more likely to develop a general diffuse peritonitis, due to a bigger field of raw surfaces, with the spreading of infection by manipulation during the operation as well as lowering the resistance by keeping the patient on the operating table longer; therefore, it is better to drain than to remove this type of gallbladder while acutely inflamed. Later, however, it can be removed when the patient's condition has improved and the acute infection has subsided. Sixty to seventy-five per cent of such cases show good results by this treatment, but the mortality rate is higher if the gallbladder is removed.

Chronic infected gallbladders show better results from cholecystectomy than from cholecystotomy, and this is the best procedure if the patient is able to withstand the operation. About eighty per cent of good results are obtained in this type of operation.

Cholecystectomy is the operation of choice in cholesterosis or strawberry gallbladder disease, as drainage in this type of case does not cure, but removal of the gallbladder gives good results. Therefore, one hundred per cent of these gallbladders should be removed unless some other abnormality prevents one from doing so.

Cholecystotomy has been done by some operators, but it is done only on young individuals who have one smooth, opaque, free stone in the gallbladder, which, in this operation, must be smooth, glistening, and with good blood supply. It must be normal in appearance in every way with the exception of the stone that is present. The gallstone in these cases is not a result of a previously existing disease, but is a metabolic disturbance and very seldom, if ever, recurs after operation. These patients recover rapidly because there is no infection of the biliary ducts and the normal equilibrium continues. If the gallbladder is drained or removed in these cases, it produces a disturbance in the biliary passages which does not compensate properly to any changes which may occur from these operations. It appears that the bile passages are not fully capable of taking care of these disturbances in young people as they are in older individuals.

VARIOUS DIARRHEAS IN INFANCY *

By G. G. HODGES, M.D.
Kilsythe, W. Va.

Diarrhea, as you know, is an abnormal condition of the bowels accompanied by frequent evacuations. In a way, there seem to be two schools: one composed of those who believe all diarrheas are due to bacterial infection; and the other, those who believe all diarrheas are chemical, due to direct action of sugar, salts, or fats upon the digestive apparatus and upon metabolism. According to the teaching in the New York Post-Graduate School, neither is all in the wrong, nor are both in the right. The following classification embraces both teachings:

1. Intestinal indigestion from fat, sugar, protein, and starch, causing diarrhea.
2. Intestinal indigestion when accompanied by underfeeding or overfeeding and lowered tolerance.

INFECTIOUS DIARRHEA

1. Fermentative.—Sugar or starch diarrhea.
2. Putrefactive.—Protein diarrhea.
3. Mild types of infectious diarrhea.
4. Dysentery (or ileo colitis).
5. Parenteral infections.

MISCELLANEOUS

1. Marasmus.—Loss of power of assimilation.
2. Coeliac disease.
3. From cathartics.
4. Organic causes, as typhoid, amœba, tuberculosis, and intussusception.

Intestinal indigestion is the etiological factor in the largest per cent of cases. Infectious diarrhea is seen mostly in summer, and in many of these cases the predisposing cause was first an intestinal indigestion. Intestinal indigestion is caused by feeding mixtures containing more fat, sugar, protein, or starch than the individual infant is capable of digesting, or feeding these elements in a form that can not be digested. You may have a diarrhea due to indigestion of sugar, protein and fat that originally was due only to one of these foods.

Diagnosis of Diarrhea Due to Intestinal Indigestion.—Onset gradual. No fever. Often temperature subnormal. Weight stationary, or there may be loss. Stools, from three to twelve per day; may be

* Read before the Fayette County Medical Society, June 11, 1928.

yellow, green or brown in color; may be watery or firm but never smooth and homogeneous; odor may be normal or sour-smelling, but more often acid. No blood, unless due to a local condition such as an anal fissure or polypus. Curds are usually found.

Underfeeding or overfeeding is also a cause of diarrhea.

Mechanical diarrhea is caused by giving some indigestible food, such as uncooked starch or other food unfit for infants.

Infectious diarrhea: Fermentative, putrefactive, dysentery, coeliac disease.

Fermentative Diarrhea.—It is known that the intestines normally contain both fermentative and putrefactive bacteria. If a carbohydrate diet be given theoretically, the putrefactive bacteria will be started out. If a protein diet be given theoretically the fermentative bacteria will be starved out. This theory forms a good basis for treatment. The fermentative type of diarrhea is more common than the putrefactive, due to the well-nigh universal habit of giving large amounts of sugar to bottle-fed babies. We can say that fermentative diarrhea is caused by bacteria which thrive on carbohydrates, and that putrefactive diarrhea is caused by bacteria which thrive upon protein.

Fermentative diarrhea usually occurs in babies which have been fed a high sugar or starch diet, while putrefactive diarrhea usually occurs in infants fed on high protein diet or one of strong milk mixtures containing very little sugar or starch. Young infants under eight or nine months of age are more prone to fermentative diarrhea, while older infants are more prone to putrefactive diarrhea.

In fermentative diarrhea, the stools are green, watery, sour, acid reaction, and buttocks are inflamed and excoriated.

Putrefactive Diarrhea.—Stools are brownish, very foul, alkaline reaction, and there is no excoriation of buttocks.

When diarrhea is due to fats the stools have a scrambled-egg appearance, acid reaction; one can see specks of fat, and the odor is that of rancid butter. Always inspect a fresh stool as it will, in an hour or two, turn green, due to change of bilirubin to biliverdin.

Infectious Diarrhea.—Sudden onset, fever; often vomiting and intestinal pain.

Ileo-colitis.—Sudden onset; temperature may be 104° to 106°; uncontrollable vomiting; rapid loss of weight; ten to twenty-four stools in twenty-four hours. After the fecal matter has been evacuated the stools are composed principally of blood and mucus, and each evacuation is accompanied with tenesmus.

Cholera Infantum.—You are familiar with this type of dysentery, where there is no blood in the stools. The infant is taken violently ill, with high temperature, almost continuous vomiting, profuse diarrhea; stools quickly lose the fecal character and become like rice water. Mostly serum and mucus. Body fluids soon drained; collapse, coma, and death in twelve to twenty-four hours.

Parenteral Diarrhea.—A diarrhea occurring during an infectious disease. Common colds cause the greater number. The child may be gaining weight and progressing nicely on a feeding formula, and develop a diarrhea simultaneously with a coryza, cough, and fever. Bronchitis, tonsillitis, sinusitis, mastoiditis—in fact, any infectious disease—may be the primary cause of this diarrhea.

Coeliac Disease.—A chronic form of diarrhea with acute exacerbations. Most often seen in second year of life. The child is unable to digest fat. Etiology unknown. Symptoms: Diarrhea, recurrent, five to twenty stools per day. Seldom occurs in first year, but is seen more often in second and third year of life. Abdominal distension (next day may be flat), emaciation, muscular weakness. May vomit two or three times a day, then quit for a week; then another attack of vomiting. Loss of appetite, acidity of stomach very low. Very important thing to remember in these infants is the facial expression. The fat pats about cheeks do not disappear as in marasmic babies, and the eyes are not sunken.

TREATMENT

Diarrhea is the result of incorrect feeding, or it is due to bacterial infection, or both. Formerly, all cases of diarrhea were treated in a routine manner —a cathartic followed by a period of starvation— because it was thought all diarrheas were due to bacterial invasion from sources outside the body. In certain cases this routine is a very useful procedure. In many cases a cathartic causes more irritation to bowels. In emaciated infants a cathartic lessens the strength; so, also, does starvation.

Protein foods: One third milk and two thirds water—protein milk or calcium. Caseinate mixtures and lactic acid milk, one third, and two thirds water. Boil together three minutes. Indications: Indigestions from fat, sugar, protein or starch, underfeeding or overfeeding, and mild types of fermentative diarrhea.

Protein milk and calcium caseinate mixtures: Indications: Intestinal indigesion and fermentative diarrhea, severe and longstanding. Any case of diarrhea where your carbohydrate foods fail. Dysentery and severe infectious diarrhea. Certain cases of marasmus. Calcium caseinate mixtures—as casec and protolac. In these mixtures the whey, milk, sugar, and fat have been extracted.

Lactic acid milk: Indications: First, coeliac disease; second, marasmus; third, other cases where normal acidity of stomach is diminished.

Carbohydrate foods: Barley gruel, sugar solutions, and thick gruel such as cornstarch, arrowroot, and farina. Indications: Putrefactive diarrhea, overfeeding, mild types of infectious diarrhea, dehydration, and acidosis.

As to the medical treatment of diarrhea, I find drugs very disappointing. I use camphorated tincture of opium for pain and tenesmus. I feel you may get some benefit from the bismuth preparations. I am in the habit of using the subcarbonate of bismuth. When indicated, it should be used in large doses. In prescribing bismuth in solution, I add about one dram of mucilage of acacia to hold the bismuth in suspension. Irrigation of the bowel and lavage are indicated in certain types of diarrhea.

WHEN TO OPERATE *

By J. K. GUTHRIE, M.D.
Hagerstown, Md.

This paper was written to stimulate interest in some disease conditions that, under present plans of treatment, are in many cases almost or quite hopeless, in others very distressing. These conditions are principally due to nose and throat pathology, and are, I believe, usually preventable. Also, they should be considered as complications rather than primary diseases. I believe we are too conservative in treating nasal obstruction and then have to be objectionably radical. This may be partly due to the fact that many of these patients have had a good deal of other treatment before we see them—medical, surgical, and mail-order treatments—and that they are financially and otherwise weary and want to be advised to do nothing.

Now to mention a few of these complications of nasal obstruction and proposed remedies:

Take, first, chronic catarrhal otitis media. Frankly, I feel that in nearly all these cases I can do nothing by treatment aural to the mouth of the eustachian tube, and, in longstanding cases, little if any treatment. Most of these cases are due to obstruction, infection, or both. The remedy will be discussed after mentioning some other conditions.

Next, the chronic antrum, which, on account of its anatomy, I feel belongs in a class by itself. The antrum, for the same reason, might be considered the nasal germ reservoir. We can do a great deal here, but with discomfort to the patient, much mutilation of tissues, and imperfect results. In most cases this condition should never have become chronic. The causes, again, are obstruction, infection, or both. The remedy will be discussed later.

In other chronic sinuses, we can not be so emphatic about doing a great deal, even with much discomfort and sometimes visible mutilation. The causes are obstruction, infection, or both; but in this division diet in childhood perhaps deserves consideration.

Ocular infections, intoxications, and congestions: The infections often cause irreparable damage before anything is done, when surgery at the proper time would have prevented the trouble. I am speaking of those cases due to nose and throat pathology and of nose and throat surgery. The congestions make life almost unbearable, if we may consider photophobia due to congestion—and I think we are justified in doing so in most cases. We are not doing enough for these cases.

Chronic pharyngitis, laryngitis, tracheitis, and bronchitis: We do something for these cases, but, unless we remove the cause, which is usually above the neck, we do very little. By *we*, I mean the medical profession.

Next, distant diseases due to focal infections: These cases should be practically all eliminated, so far as the nose and throat are concerned.

I have only touched the high spots, but sufficiently to illustrate my position in proposing remedies. I contend that we have been neglecting these cases; that we have been literally waiting for complications, letting the patients get sick, then giving them palliative or mental treatment, or treating complications, when we might have cured them at an early stage; that we have been turning on the hose—not quite literally—after the fire has pretty well burned things up, when we should have been paying more attention to prevention. We have been trying to make the patient content, instead of preventing the trouble. We might gain something from a con-

---

* Read before the Eye, Ear, Nose and Throat Section of the West Virginia State Medical Association at White Sulphur Springs, West Virginia, on June 22, 1927.

sideration of general peritonitis, the treatment of which is of little importance. The prevention of it by removing the appendix or other cause is of great importance. These chronic sinuses, catarrhal conditions, etc., are just as much terminal complications as is peritonitis. Often the patient might also as well have general peritonitis. These conditions should be and can be much less prevalent. A nasal discharge, a chronically obstructed nose or chronically inflamed tonsil, should be a warrant for severe criticism of any physician who has seen the patient repeatedly and has not advised a remedy. A great many—I believe a great majority—of such patients do not get such advice.

Next, I will take up the proposed remedies:

First, chronic catarrhal otitis media. Prevention by early examination and correction of any existing pathology is our only hope and should prevent nearly all cases. I mean that every child should have a careful examination of its nose and throat at intervals of several years, even if it appears entirely normal. The examination should always be made by one qualified to do nose and throat work, and should be made in an office. Children should not be herded in school examinations, like cattle, by a political appointee whose principal qualification is likely to be of non-medical usefulness to his benefactor. The children and parents have no choice. The present method of examining school children is almost or quite worse than nothing. Tonsils with chronically reddened pillars, or cheesy material retained, or unduly enlarged, should be removed with adenoids. Nasal surgery is usually not needed when the child is well and properly fed. Every previously overlooked adolescent and adult should have the same throat treatment as given above, and in addition should have the nose put in such condition hat there is free access of air to all sinuses and free passage through the nose on both sides. Any nose that prevents vision of the anterior half or three fourths of the septum, middle and inferior turbinates on their septal sides, of corresponding spaces between the turbinates and septum, and a corresponding space between the middle turbinate and lateral nasal wall, is pathological, and usually anatomically so. Anterior edge deflections must be excepted; also, anaphylactic states and acute conditions must be excluded. The only means of properly diagnosing a great many of these cases is by shrinking the mucous membrane as much as possible. The antrum, the nasal germ reservoir, must be kept in mind.

Next, the chronic antrum should nearly always be prevented. The sub-acute antrum should be permanently opened as soon as acute symptoms have subsided and sooner if local applications do not give relief. An antrum, once diseased, should be considered a nuisance—an almost certain cause of future trouble—and should be pathologically eliminated by a large, permanent opening. A chronic antrum is just as much a menace as a chronic appendix. If uncertain about the condition, we are often justified in an exploratory operation, which is harmless and practically painless. X-ray and transillumination are often without value. A probe or direct vision may be necessary. I mean, by a diseased antrum, one that has shown definite symptoms, not one that has shown no definite symptoms referable to the antrum, which nevertheless we might properly assume has been diseased in the course of a severe head cold but has good ventilation. Obstruction in the nose should be removed. If this plan is followed out, there will be few more chronic antra. Incidentally, the usual manner of treating chronic or subacute antra by six weeks of punctures and irrigations, or six years suction, is much more disagreeable and expense to the patient (and more trying to the doctor) than simple permanent drainage at one sitting with little or no further treatment. The time will come when antrum ventilation, either directly or by submucous resection, will be as common in adults as the tonsil operation, and rightly so. Incidentally, the radical operation will become a relic of an age of neglect.

Next, all other sinuses. I believe there would be few such cases if the diet were proper and sufficient in childhood and other defects in the nose and throat were remedied at proper times; especially if the feeder, the nasal germ reservoir, is eliminated when diseased. There is no reason for so much disease in these sinuses with their more or less natural drainage. When we do find them in adults, we should operate without delay instead of aggravating the patient first, then operating. In children, correct other pathology and diet first.

Next, ocular infections, intoxications and congestions due to nose and throat pathology should be almost eliminated by prevention. The cause should be removed before the complications arise, instead, in the infections, of grasping at a straw in a perhaps nearly blind patient. In the congestions and intoxications we should not hesitate to operate on an uncertainty. In the congestions, I believe some of you will be surprised at the number of cases relieved

by proper aëration. We would do well to recognize a congestion asthenopia, which might properly be called "sinus eye," due to sinus congestion, characterized by ocular pain or discomfort, or both, especially on intensive application of the eyes; more noticeable with, or aggravated by, head colds; relieved by proper ventilation of the nose and sinuses. There is often soreness of adjacent teeth, puffiness of the eyelids, and dizziness. It is not relieved by dozens of pairs of glasses or gallons of drops.

Next, in chronic inflammation of the pharynx, larynx, trachea, and bronchi, there should first of all be an examination of the nose and throat. All pathology found should be eliminated, if possible, instead of making chemical garbage cans of their stomachs for two or three years, and, as a last resort after the patient has become wearied and unmanageable, having the nose and throat examined.

Next, focal infections should be prevented rather than cured. Don't forget the nasal germ reservoir.

The question naturally arises, how can we get hold of these patients at the proper times if we want to? In the first place, all work done should be carefully done and based on sound judgment. There is entirely too much slipshod work being done by specialists, not to mention worse being done by those who do not pretend to be especially qualified. Naturally, results are often bad and it is hard to get people's confidence. The remedy is obvious and difficult, yet possible.

Next, periodic examinations are much more necessary in this work than in general medicine. No one should reach maturity without a routine nose-and-throat examination and proper treatment, both always by a specially qualified doctor. There may be some question about the desirability of periodic examinations in general medicine, but they are the only hope in eye, ear, nose and throat work. Education of the public is necessary, difficult, and possible. I believe that some open advertising by the medical profession would be quite the thing, instead of the "bootleg" advertising that is being done unscrupulously by the wholesale. Perhaps we are only like the ostrich in not seeing the light and letting people know the truth.

By early, careful surgery, we can and should prevent a lot of these conditions that in many cases we can not cure after they have developed, and, in other cases, that we do not cure by the treatment in vogue. The sooner we recognize these conditions as late complications, rather than primary conditions, the sooner we recognize the problem for what it is and concentrate our attention on means of prevention, the better. When we do his we will soon have these conditions under control. To do otherwise is somewhat similar to letting the country get full of smallpox, then attempting to cure it; and, a few years ago, that was quite all right. We are doing next to nothing for these cases, and *can* do a great deal. This is a big undertaking, and would make it possible to do a lot of needless surgery, but difficulties do not excuse neglect.

Finally, to sum up briefly:

The unventilated antrum is an ideal home for germs.

Nasal obstruction as an entity deserves a great deal more consideration.

These conditions are complications.

Chronic catarrhal otitis media, chronic sinus disease, chronic mucous membrane disease of the airway, congestion asthenopia, and disease due to head focal infection are all preventable.

Congestion asthenopia is curable at any time.

The time to operate is before there are complications.

Health Appeal

The advertising writers of our progressive land have found the word "IT" in their profession means "Health Appeal." A cursory inspection of current periodicals indicates no lessening of the attention to the health angle. The folly of the all-or-nothing policy in foods, the ridiculousness of some of the arguments as to vitamin content, the preposterous claims for glorified antiseptics, the cautious venturings of time-tried tonics into the public field, and the dazzling claims of the promoters of light arouse the risibilities of the physician by their startling inconsistencies if not by their exaggerations. Who would have thought ten years ago that cigarettes would be sold to the American public by insistence on the healthful quantities of certain brands? The manufacturers of Lucky Strike cigarettes are promulgating a campaign in which they assert that these cigarettes do not cut the wind or impair the physical condition, and that "Lucky Strike satisfies the longing for things that make you fat without interfering with a normal appetite for healthful foods." The human appetite is a delicate mechanism and the attempt to urge that it be aborted or destroyed by the regular use of tobacco is essentially vicious.—*Journal A. M. A.*, December 8, 1928, p. 1806.

CASE REPORTS

PREGNANCY COMPLICATED BY BURNS *

By THOMAS W. NALE, M.D.
Charleston, W. Va.

This is a case of a burn caused by the notorious habit most women have of standing in front of an open fireplace.

Mrs. T. (Case No. 21137) was admitted to the Charleston General Hospital on December 19, 1928. At 7 A.M. of the same day, while standing in front of an open grate, her clothes became ignited and she was severely burned. The burns involved her entire back, extending from a level below the buttocks to the base of her neck. Her right arm was burned from the shoulder to the wrist and on the right side the burns extended around to the midline of her lower abdomen. The burns were mostly second-degree burns, but over the buttocks and right side they were third degree.

The patient presented the following obstetrical history:

Aged 24; gravida IV. Previous medical history negative, except for an occasional sore throat. Family history was negative. All her previous deliveries were spontaneous and her puerperiums were uneventful.

Menstrual history: Began to menstruate at 13 years; regular every 28 days, lasting 7 days, with some pain. Her last period was on March 1, 1928, and her expected date of confinement was December 8, 1928.

The patient suffered from some nausea and vomiting for the first three months of this pregnancy, and with an occasional headache and some edema of her ankles.

At 11 P.M. of the day of admission, the patient began having some labor pains. She was given morphine in sufficient doses to relieve her of any undue discomfort. At noon the following day the patient's pain had let up some, and, as she was practically completely dilated and the fœtal head was low, she was given 3 minims of pituitrin. This effected a spontaneous delivery at 1:15 P.M. Ethylene and oxygen were used as the head was delivered. The infant was a normal, well-formed male.

Laboratory findings: On admission the urine presented a faint trace of albumen and sugar; 4-5 blood cells per field and 15-20 pus cells. Her red-blood cell count was 4,000,000, and her white-blood cell count was 7,750. The following day the urine still presented a very faint trace of albumen. On the 31st her white-blood cell count was 20,500 with 33% polynuclears.

Her febrile record was as follows: Ninety-nine degrees temperature on admission; three days after delivery it reached 102°, and six days 101.4°. Since then it has been around 99° as its maximum. This febrile reaction was attributed to the toxemia from the burns.

Her recovery has been uneventful, and this is the interesting feature of the case. Pregnancy alone is a tax on the kidney reserve, but delivery and such an extensive burn would lead one to anticipate a much more stormy convalescence. The patient's blood-pressure was only 135-75, and at no time did she present any evidence of lack of kidney function. She was given, throughout, large amounts of fluids and her dietary régime was that of a low-protein, salt-free diet.

Black area denotes area of burn. The darker areas denote third-degree burn.

The patient was unable to nurse her baby, due to an inadequacy of breast milk.

* Read before the Kanawha Medical Society at Charleston, West Virginia, on January 15, 1929.

This case also presents another problem—the cause of the onset of labor. In this case the patient was at term, but the shock of such a severe burn might have caused her to have gone into labor. Authorities are still up a tree, so to speak, for an explanation as to why a patient falls into labor 280 days after conception occurs. The various well-known theories are not well founded. Some of these theories are as follows:

Side view of Case No. 1.

1. By degeneration of the decidua—the ovum becomes a foreign body, therefore the uterus undergoes contractions to expel the foreign body.

2. Changes in the blood: Increased CO_2 in the maternal blood from the thromboses of the placental vessels or of fœtal blood, initiates the uters to contraction.

E. Jerlòv reported in the *Scandinavian Journal of Obstetrics and Gynecology*, May, 1926, that blood taken from the umbilical cord immediately after birth contains substances which promote the activity of a resected uterus of a guinea pig to a greater extent than does the other blood, even that from the mother. This finding is interpreted as indicating that the stimulus of labor under normal conditions originates in the fœtus.

Dr. Hofbauer, of the Johns Hopkins Obstetrical Clinic, reported in the *Journal of Obstetrics and Gynecology* for August, 1928, some interesting experiments, and concluded that "with the fact established there occurs a steady increase of bile salts in the blood of pregnant women, a study has been undertaken to determine their effect on the automatic contraction of the uteri of the virgin and pregnant guinea pigs. The addition of bile salts suppresses the spontaneous uterine contraction, the effect being accomplished by the specific surface tension lowering power of the bile salts."

The relaxation of uterine tone could not be neutralized by the addition of doses of pituitary extract which are otherwise effective. Large amounts of pituitary produced strong uterine contractions occurring during labor.

3. Endocrinal influence, such as that promoted by Dixon and Marshall, which decadence of the corpus luteum removes the inhibitory influence that the ovary normally exerts on the hypophysis. This is unfounded because numerous cases have been known to have gone on to term after complete removal of the ovaries.

4. Menstrual cycle: Throughout pregnancy the uterus undergoes painless contractions. These increase in intensity toward term. Patients are more likely to abort or go into labor prematurely at or about the time they would have menstruated. The contractions are greatest at the menstrual period.

5. Pressure of the presenting part on the lower uterine segment: This, in turn, causes pressure on the nerves of the great cervical ganglia and causes contractions of the uterus.

This is why the Vorhee's bag, as a method of induction of labor, is often successful; yet one often sees a patient that carries her infant low in the lower uterine segment with a distention of that part for several weeks.

In the use of the Vorhee's bag, statistics prove that thirty to forty per cent terminate spontaneously and seventy per cent operatively. Dr. Madden, in an article in *Gynecology and Obstetrics* for December, 1926, concludes that "where it may be employed successfully, it often is unnecessary. Expectancy is as certain and more logical. I believe this is also true of most of our present day methods of induction of labor." Dr. Madden also states: "The Vorhee's bag merely precedes manual dilatation of the cervix and its use must be recognized as being strictly limited to the production of a dilatable cervix."

6. Overdistention of uterus has been given as a cause for a patient going into labor. This is only true in cases of polyhydraminious and multiple pregnancies.

7. Accident, nervous shock, injury, etc., have long been attributed as a cause of patients going into labor.

Albert Mathieu, in an article in *Obstetrics and Gynecology* for February, 1927, mentions a successful induction with two ounces of castor oil and ten grains of quinine, followed in two hours by three minims of pituitrin, repeated every thirty minutes

until labor starts, and no longer. In 91 cases there were only three failures.

The induction of labor by large doses of pituitrin, as advocated by Watson, is to be discouraged, because of the well-known dangers to both mother and child.

Quinine and castor oil are successful when given at just the proper time, when the patient is about to go into labor.

Dr. Henson will discuss the treatment of the burns in the above reported case.

Discussion

DR. E. BENNETTE HENSON: This patient is the first one I have treated with a complication of this nature. Under ethylene anesthesia the entire burned area was cleansed of dead tissue by the use of a stiff scrub brush, knife, and scissors. Tannic acid spray of a 10% solution was then sprayed liberally over the entire area every hour for the next twenty-four hours. After the first day the burn was then treated with sodium bicarbonate compresses until the charred tissue was completely removed, after which the open cradle light was used and epitheliazation of the area was practically complete in thirty days.

During the past two years we have treated eighty-six severe burns in the manner stated above, with a death rate of twelve. Prior to the discovery of tannic acid treatment we had used the early debridement procedure as advocated by Willis, with excellent results, and the addition of tannic acid after debridement is, we believe, a distinct advantage in a severe burn.

INTESTINAL OBSTRUCTION

By B. I. GOLDEN, M.D.
Davis Memorial Hospital
Elkins, W. Va.

The two case reports which follow do not attempt to bring out the unusual, but rather to present cases seen in everyday practice that may be an aid in diagnosis or treatment:

CASE I.—Mrs. M. S., 12085. White, female, age 62; occupation, scrub woman. Admitted August 29, 1928. Suffering with pain in abdomen. Continuous vomiting. Present illness—fifteen days prior to admission patient developed a sharp pain in the right hypochondrium which radiated to the left side of abdomen. Within a few hours vomiting started. Vomiting slightly reduced pain. Pain more pronounced in recumbent position. Twenty-four hours later pain radiated between shoulders. Bowels did not move for three or four days in spite of cartharsis, which seemed to aggravate condition. Became progressively worse until admitted. Note—had a similar attack one month previous which lasted a few days. Past history—Negative for any serious illness. Chronic constipation. Pregnancies, seven; no miscarriages. Husband died from traumatic injuries.

Family history: Negative for tuberculosis and malignancy. Positive physical findings: In extremis. Emaciated, dehydrated, elderly white female. Facies drawn. Vomiting fecal material. Pupils dilated. Mucous membranes pale. Cardiovascular: myocardium weak, vessels markedly fibrosed. Blood pressure 100-65; pulse rate 120; temperature 97.6. Respirations 22, shallow, labored. Abdomen: Rigid throughout; marked diathesis of recti muscles; distended and tympanitic; exquisitely tender to touch; no palpable masses. (Because of condition, thorough examination of the abdomen was not attemped.) Laboratory findings: Urine, catheterized specimen reddish, sp. g. 1030, albumin four plus, sugar one plus; white blood cells, one plus; acetone present. No blood study made.

Positive surgical pathology: Plastic exudate over abdominal contents; intestines kinked in numerous places and bound down by fresh adhesions; primary obstruction through opening in mesentery of transverse colon; herniated mass-contained jejunum, this portion very dark but, during manipulation, sufficiently established to warrant non-interference; all adhesions broken up. Anesthetic ether, ounces iv. Pre-operative treatment: Gastric lavage; post-operative, 1,000 c.c. normal saline intravenous on operating table, followed by glucose and soda bicarbonate per rectum. Post-operative condition very poor. Progress record: Vomited twice during first twelve hours; passed some flatus; small formed stool morning third day following enema; fourth day, voluntary stool; wound healed by first intention. Pre-operative diagnosis, intestinal obstruction; post-operative diagnosis, intestinal obstruction due to mesenteric hernia.

CASE II.—Mr. R. B., 15024. White, male, age 49; occupation, florist. Admitted 9 P.M. January 19, 1929, suffering with severe abdominal pain. Present illness began twenty-four hours ago with severe pain in left hypochondrium. Pain became progressively worse and radiated throughout abdomen and lumbar regions. Nauseated, but could not vomit. At 6 A.M. received hypodermic of morphia.

Enemas during the past twelve hours returned clear. Patient progressively worse until admission.

Past history: Operated on twenty-five years ago for "pus" appendicitis; long drainage period; five years later, developed "indigestion." This usually occurred after meals—would vomit undigested food and obtain relief. Rarely had acute pain. Chronic constipation. Minor diseases of childhood.

Positive physical findings: Thin, dehydrated, white male adult. Heart sounds good. Blood pressure 110-70. Temperature 98, pulse 56, respirations 18, shallow. Abdomen rigid, tympanitic throughout, distended in lower half. No palpable masses; extremely tender.

Laboratory: Urine voided, amber, neutral to litmus; specific gravity 1030; sugar, one plus; acetone, one plus. Blood examination: Hemoglobin 92, red blood cells 5, 110,000; white blood cells 17,000; polys 82, lymph 14, endothelial cells 2, eosinophiles 2. Blood chlorides not done. Positive surgical pathology: Firm band of adhesion extending from ileocecal fossa to sacrum. Under this band the ileum had herniated. The kink of intestines was firmly held; not gangrenous. The cecum was bound down by numerous fine adhesions. Ether anesthesia, ounces viii. Pre-operative and post-operative diagnosis: Intestinal obstruction. Post-operative condition, fair. Progress notes: Normal saline, 500 c.c. intravenous on operating table. Glucose and soda bicarbonate per rectum. No vomiting; some distention. Enema returned clear at end of first ten hours; no flatus. Twenty hours, thin brown stool with large amount of flatus. Wound healed by primary intention; uneventful recovery.

ABSTRACTS

Tubercular Immunity

HEIMBECK, JOHANNES.—This article endeavors to prove, through tests made on the nurses at the Municipal Hospital at Oslo, Norway, the efficiency of inoculation with Professor Calmette's avirulent tubercle bacilli in securing immunity from tuberculosis.

As soon as the nurses enrolled they were given the Pirquet cutaneous tuberculin reaction. Over a four-year period the results in 420 nurses were approximately 50 per cent positive and 50 per cent negative.

Similar tests on Oslo school children, however, showed that at the age of nine 85 per cent had a positive test. At the age of twenty about 50 per cent were positive, showing that the Pirquet reaction disappears largely after childhood; the infection tion had been killed by the organism. Practically the same ratio held good in 79 medical students and on 222 military recruits.

However, it was shown that among the nurses who caught tuberculosis at the hospital the great majority were those whose Pirquet had been negative. This was because they were virginal for a new infection when they entered the hospital. The ones whose Pirquet was positive had a resistance against the disease and did not catch it.

All this proves that the tuberculosis infection takes its general course at once either to disease covering the organisms, or to immunity, expressed by Pirquet's reaction, to be conquered by the organisms.

Bearing the foregoing statements in mind, the results of inoculating nurses with Calmette's avirulent tubercle bacilli show that out of eleven Pirquet-negative nurses inoculated none got the disease. On the contrary, of twelve Pirquet-negative nurses who refused to be inoculated, four up to this time have shown a tuberculous disease.

This proves that the great majority of cases of tuberculosis come from Pirquet negatives. Also, that by inoculation with Professor Calmette's avirulent tubercle bacilli the Pirquet is made positive and the person made largely immune to tuberculosis.—*International Clinics*, December, 1927.

Malnutrition

E. W. KUTSCHER, M.D. (*American Medicine*, November, 1928) believes that malnutrition as such can not be cured by diet alone. Nevertheless, the dietary question is naturally a very important one. To the requests made by every mother, "What shall I give my child to eat?" the answer is, "A balanced diet." Two types of food must be cut out of the undernourished child's diet—sweets and fats. It should be borne in mind that practically every malnourished child has a poor or finicky appetite. The following rules are given to reëstablish normal appetite: 1. Establish definite meal-times—four or five a day, according to certain conditions to be considered later. 2. Make it an inviolable rule that nothing in the way of food is to be taken at any other time. 3. Eliminate all sweets from the dietary—"added sweets" perhaps is a better way of putting it. This prohibition extends beyond the sugar-bowl on the table to candy, jams, jellies, molasses, honey, and drug-store sweets. 4. Cut the butter down to a scanty portion and remove all cream from the milk.

Next to excess sugar, fats are the most frequent cause of the lack of child's appetite. 5. Do not urge or even ask the child to eat this, that or the other thing. Say nothing more to the child than would be said to a casual guest at the table. Have the child remain at the table for twenty minutes, whether he eats or not, and then excuse him. Of course, no dessert is permitted unless he eats his "plate clean." The next step is to be certain that he gets nothing in the way of food between that meal and the next one. Persistence is obviously necessary, and in a short while the appetite will return. Firmness is also paramount. If the mother feels that she can not carry out every rule to the letter, she had better not begin.

TUBERCULOSIS ABSTRACTS

The Neglected Age

While the mortality from tuberculosis in general had declined 36% in the last decade, the tuberculosis death rate at ages 15 to 25 had declined only half that amount. The greatest decline was shown for children under 5, their tuberculosis mortality having been reduced over one half in the decade. In the age period 25 to 44, the rate had declined 42%. For children aged 5 to 14, the decline was almost the same. Even the mortality of older persons past 65 showed a decline of 31 per cent. The young group, 15 to 24, alone had made little progress.

Classification according to sex shows great disparity between males and females. For the 15–19 group, the death rate for girls is about 75% higher than that for boys, and at ages 20–24, the women have a death rate 20% to 25% higher than the men. This disparity has been visible in the United States figures since 1900, but the variations have become greater in recent years.

The same phenomenon has been noted by Green, who made an analysis of the tuberculosis mortality of Cleveland, *viz.*, that the mortality among females aged 15–24 was considerably higher than for men of the same ages, and that their mortality was decreasing much more slowly.

The Metropolitan Life Insurance Company finds that the excess of mortality of young females did not appear in their figures until about 1915. Their comment is as follows: "Contemporaneous with a declining death-rate, something has occurred within the past fifteen years to cause the mortality among the young white women to be higher than that of young white men."

These phenomena are made more striking by comparison with the figures for England and Wales. The decline in the general tuberculosis death-rate has been similar for both countries, being somewhat accelerated in the United States. But from a recent analysis of the age and sex incidence of English figures by Cobbett of the University of Cambridge, he concludes that "the decline (in tuberculosis mortality) has been smallest in childhood and old age, greatest between 15 and 25. . . . Between 15 and 25 . . . young women benefited rather than the young men."

The problems of mortality of this young group are not peculiar to tuberculosis alone. A recent analysis of heart disease figures shows that, in the last ten years, heart disease has *declined* in every age group up to age 45, except young people aged 15 to 24.

Various causes are adduced by many writers. The increased industrialization of women which took place during the war years, the extracurriculum activities of high school and college students, the physiological changes following the adolescent period and the dieting fad—all these in varying degree may have had their part in the result. It is, perhaps, trite to say that the group of young people aged 15 to 24 is the one which must "carry on" for the entire country. We have intensive health activities and services for the infant, the pre-school child, elementary school children, mothers, men in industry, and yet these millions of boys and girls and young men and women, who are making all their adjustments to life at this critical period, are left untaught in regard to health. Surely, a neglected age.—Jessamine S. Whitney, *Health in High Schools*, National Tuberculosis Association, 1927.

Tuberculosis Among High School Students

The author, during recent years, has examined a large number of high school students in Chautauqua county, New York. Of the first thousand examined, 1.3 per cent were found to have tuberculosis of the lungs, either in a healed or active state. A relatively large part of the active cases were athletes engaged in the major sports. Seventeen were listed as suspects. One per cent of the student body had heart complications. More than 22% had enlargement of the thyroid gland.

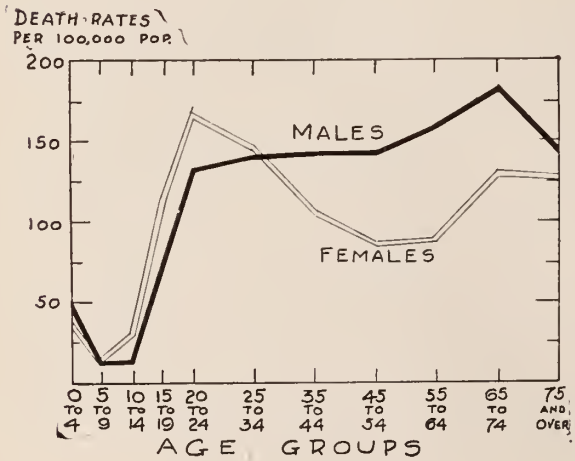
When tuberculosis is found, those who control to any great extent the activities of the group are so

notified. The parents are informed as to the proper care of the children, and the school authorities have been most coöperative in their efforts to prevent overwork of those affected.

Thus far, all but the active cases have been kept in school, and yearly reëxaminations show that most of them are doing well. The plan outlined would seem to preclude the possibility of damage through mental or physical strain sufficient to produce a relapse of the disease. The present tendency in schools is to push the students to the limit of their mental capacities, and the student with a keen mind is urged to take on additional study loads in order to finish the grades at an earlier age. Such a plan may be commendable for healthy children, but it certainly is not conducive to the health of those who are below par physically. The examination of the school children has been a very real help in dissipating certain of the terrors which tuberculosis formerly had in the minds of many of the people.

DEATHS FROM TUBERCULOSIS BY AGE AND SEX GROUPS

U. S. Registration Area, 1923



Many of the cases found during school examinations are destined to become the active cases of the future if they fail to carry out proper precautions at this time. Judging from the histories of many young adults admitted to the Newton Memorial Hospital, the writer feels sure that pulmonary tuberculosis, probably in a healed state, could have been demonstrated during their high school careers, had they been properly examined for the disease.

The writer's present plan is to examine all high school seniors and arrange for the examination of every pupil applying for working papers. If possible, he hopes to make the securing of working papers contingent upon physical and x-ray examinations of the chest. If the disease is not recognized at this time, a relapse is likely to occur as a result of changed conditions and the pressure of competition with healthy workers. In addition to the seniors and students leaving school, "contacts" and those with symptoms in the past are examined in the hope that eventually the grades will be reached and the entire school population covered. Wide use of the x-ray is necessary in school examinations. If funds are available, every student should be pictured. Such a policy will prove to be a wise investment of public funds.

When a diagnosis of tuberculosis in any form is made on a child, a thorough study of the family unit should follow. If all members of the family are alive, such a procedure is very likely to lead one to a tuberculous parent and possibly infected brothers and sisters.

The public school is one of the most important fields in the control of tuberculosis, and its potential resources of clinical material should be thoroughly exploited. When such a policy is universally adopted and is considered as essential, rather than as an "extra part" of case-finding machinery, then we will approach with greater strides that day of all days when the great white plague is mastered and is no longer a menace to human kind.—"Tuberculosis Among High School Students," Walter L. Rathbun, M.D., *Journal of the Outdoor Life*, January, 1927.

Chemical Examination of Salyrgan

G. W. Collins reports work carried out in the A. M. A. Chemical Laboratory for the Council on Pharmacy and Chemistry on Salyrgan. He reports that in various journals, periodicals and textbooks a structural formula is given for the compound which differs from that used by the distributor of the product. The theoretical percentage of mercury of neither formula agreed with that given by the manufacturer. The examination disclosed that the formula used in the German literature was incorrect and that that of the manufacturer is correct. The product was found to be a definite chemical compound and of good purity. On the basis of examination, tests and standards were drawn up; these were agreed to by the manufacturer and are used in the New and Non-official Remedies description adopted by the Council on Pharmacy and Chemistry.—*Journal A. M. A.*, December 22, 1928, p. 1994.

THE WEST VIRGINIA MEDICAL JOURNAL

JAMES R. BLOSS, *Editor-in-Chief* - - - - - - - - - Huntington

...ASSOCIATE EDITORS...

J. HOWARD ANDERSON	WALTER E. VEST	C. A. RAY	HARRY M. HALL
Marytown	Huntington	Charleston	Wheeling

THE JOURNAL issued on the first of each month. Entered as second-class matter January 1, 1926. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917. Authorized July 24, 1919.

Subscription to Members	$2.00 Per Year
Subscription to Non-Members	$3.50 Per Year
Single Copies	50 Cents

OFFICERS

President:
H. M. HALL ..... Wheeling

First Vice-President:
B. F. BONE ..... Moundsville

Second Vice-President:
W. C. SWANN ..... Huntington

Third Vice-President:
J. A. DUFF ..... Martinsburg

Executive Secretary:
MR. JOE W. SAVAGE ..... Charleston

Treasurer:
T. MAXFIELD BARBER ..... Charleston

Delegates to A. M. A.:
JAMES R. BLOSS (1928-29) ..... Huntington
HENRI P. LINZ (1928) ..... Wheeling

Alternates:
A. A. SHAWKEY (1928-29) ..... Charleston
HARRY M. HALL (1928) ..... Wheeling

COUNCILLORS

Chairman of the Council for 1928:
R. H. DUNN ..... South Charleston

First District:
C. W. WADDELL (2-year term) ..... Fairmont
C. G. MORGAN (1-year term) ..... Moundsville

Second District:
C. H. MAXWELL (2-year term) ..... Morgantown
C. H. HALL (1-year term) ..... Elkins

Third District:
JOHN FOLK (2-year term) ..... Bridgeport
J. D. COLE (1-year term) ..... Clarksburg

Fourth District:
ROY BEN MILLER (2-year term) ..... Parkersburg
W. E. VEST (1-year term) ..... Huntington

Fifth District:
J. HOWARD ANDERSON (2-year term) ..... Marytown
H. G. STEELE (1-year term ..... Bluefield

Sixth District:
R. H. DUNN (2-year term) ..... South Charleston
H. A. WALKUP (1-year term) ..... Mt. Hope

¶ All original articles for THE JOURNAL must be made to it exclusively. Communications and items of general interest to the profession are invited from all parts of the state. Notices of deaths, removals from the state, changes of location, etc., are requested.

¶ Our readers are requested to send marked copies of local newspapers containing matters of interest to members of the medical profession. Name of sender should be given.

CONTRIBUTIONS TYPEWRITTEN

¶ Contract with present printer specifies all articles, communications, etc., MUST BE TYPED.

ADVERTISEMENTS

¶ Advertising forms will go to press not later than the tenth of each month. All advertisements must conform to the standard established by the Council of Pharmacy and Chemistry of the A. M. A.

WOMAN'S AUXILIARY

Mrs. R. V. Shanklin, Gary, President; Mrs. T. H. Harris, Parkersburg, vice-president; Mrs. W. C. Swann, Huntington, secretary; Mrs. W. D. Simmons, Slab Fork, treasurer.

Councillors

Mrs. C. G. Morgan, Moundsville, first district; Mrs. Ralph Maxwell, Morgantown, second district; Mrs. H. D. Price, Parkersburg, third district; Mrs. J. R. Bloss, Huntington, fourth district; Mrs. A. G. Rutherford, Welch, fifth district; Mrs. E. S. DePuy, Beckley, sixth district.

Delegates to Woman's Auxiliary of A. M. A.

Mrs. R. V. Shanklin, Gary; Mrs. B. S. Preston, Charleston. Alternates — Mrs. George Jeffers, Parkersburg; Mrs. W. B. Scherr, Morgantown.

STANDING COMMITTEES

Medical Defense Committee

C. G. Morgan, Moundsville, Chairman; H. A. Walkup, Mt. Hope; H. G. Steele, Bluefield.

Committee on Scientific Work

O. B. Biern, Huntington, chairman; G. H. Barksdale, Charleston; A. G. Rutherford, Welch.

Public Policy and Legislative Committee

R. A. Ireland, Charleston, chairman; R. H. Walker, Charleston; James McClung, Richwood; C. R. Ogden, Clarksburg, D. A. MacGregor, Wheeling.

Committee on Medical Education

John N. Simpson, Morgantown, chairman; W. T. Henshaw, Charleston; W. S. Fulton, Wheeling.

Committee on Professional Relations

John R. Shultz, Charleston, chairman, (5-year term); A. G. Rutherford, Welch, (2-year term); W. R. Goff, Parkersburg, (2-year term); Hugh G. Nicholson, Charleston, (3-year term); E. P. Smith, Fairmont, (4-year term)

Workman's Compensation Committee

W. A. MacMillan, Charleston, chairman; C. A. Ray, Charleston; John E. Cannaday, Charleston.

Committee on Public Health

David Littlejohn, Charleston, chairman; John Thames, Charleston; Will McLain, Wheeling.

Surgical Section

Robert King Buford, Charleston, chairman; B. I. Golden, Elkins.

Eye, Ear, Nose and Throat Section

I. D. Cole, Clarksburg, chairman; C. C. Jarvis, Clarksburg.

Hospital Association Officers

R. A. Ireland, Charleston, president; J. S. Turk, Wheeling, president-elect; B. I. Golden, Elkins, first vice-president; W. E. Vest, Huntington, second vice-president; Mr. Joe W. Savage, Charleston, secretary-treasurer.

PRESIDENT'S PAGE

THERE is one big lesson to learn from the present legislative session at Charleston. It becomes rather tiring to the ears to be constantly apprised of lessons—life is so full of messages, reforms, stressings, and lessons. This one, however, seems to be preëminently practical. We must depart from our so-called "silk hat" traditions, so many of which we have had to discard.

We must enter politics not by choice but of necessity. We have been saved by politics rather than by information several times this session. Most of the bills we opposed this year would have made very little difference in our material occupations at all. Probably not one per cent. We would have gone on about the same; but the public would have suffered, and quite considerably. For this we get no gratitude, but, luckily, we do not expect it.

There are matters, such as state medicine, that are coming in the very near future, and we must be ready. Every medical society in this state should look around now and pick out some "martyr" to run at the next election. He should be one of their very best men—a representative medical man or surgeon of recognized eminence, sagacity, and wisdom. He must be a man who will sacrifice sixty days of his valuable time and go to the state legislature.

Let politics be forgotten. Each medical man can control ten men and women, and each of them in turn can control ten more. Only in such a way will legislatures learn the exact meaning of real medicine to our daily lives.

Harry M Hall

EDITORIALS

"Faith Healing"

At the time this editorial was written, the much-discussed "faith healing" bill (S. B. 93) had just been placed upon the shelf. This measure, which passed the state senate, would have completely broken down the medical practice act of West Virginia. It was put out of the way in the house on February 19, when the house members unanimously voted to refer it back to the committee on medicine and sanitation.

It should be very gratifying to the members of the association to know that they, and they alone, were responsible for getting rid of the faith healing bill. The death of this measure was made possible by the flood of telegrams which poured into the house, objecting to its passage. The telegrams were sent, at the request of the committee on legislation, from doctors in every section of the state. All of which goes to show that the medical profession can get what it wants when it becomes sufficiently aroused.

Rather than explain the demerits of Senate Bill 93, we will quote in its entirety an excellent editorial that appeared on February 18 in the *Wheeling Intelligencer*, which follows:

"A bill has passed the state senate at Charleston, and is now pending before the house of delegates, which proposes to amend the medical practices act so as, in effect, to nullify the entire act as applied to any person, or persons, who profess to practice medicine in the name of a religious belief. The substance of the bills is contained in the following paragraph, referring to the general medical practices act:

> " 'Section 9-a. None of the provisions of this chapter or of the laws of this state regulating the practice of medicine and surgery shall apply to persons who only practice christian science or the religious tenets of their church without the use of any drug or material remedy.'

"If The Intelligencer reads this bill correctly it means, in effect, that any person, or persons, who feel themselves called upon to practice medicine, and perform surgical operations, in the name of religion or religious belief, have full liberty to do so; and there is no power within the law to molest or make them afraid. The merest charlatan, professing religious faith, could, under this law, treat the most dangerous and most contagious diseases.

"If this be the case, how can we have effective health laws? What protection can the people of any city have against smallpox, typhoid fever, or diphtheria, if any individual who so chooses, without practical experience or scientific knowledge, can set himself up for the treatment of these diseases, armed only with an abundance of self-confidence and a mystic religious faith?

"Under present conditions, a man who seeks to practice medicine and surgery, following the scientific methods of the day, is compelled to undergo the following laborious and tedious processes: first, to obtain an academic education sufficient to obtain an A.B. degree; and, second, to give from four to five years of intensive study to the science of medicine and surgery in a first-class, carefully graded medical school. In other words, regular practitioners must give from six to ten years of their lives to preparing themselves for the important work which they seek to undertake. If the act, above quoted, becomes a law, all of this strenuous preparation and serious study are to be lightly brushed aside, in the case of some gentleman who believes that Providence has endowed him with superior faith and superior powers of supplication, and, therefore, he is enabled to call directly upon the Lord, without use of the knowledge which science and long years of patient study have made possible for other people to obtain.

"Moreover, to pursue this line a little further, should this bill become a law there can be no protection to the health of any city or town in the state. No effective regulation can be maintained by a city health officer over practitioners of medicine or surgery who claim to cloak their practcie under the sanctity of religion, and use nothing, in their practice, of either science or knowledge.

"The Intelligencer doubts if the membership of the state senate that passed this bill fully understood its purport. The religion of every man is his own, but no religion or belief entitles one person to the enjoyment of privileges that are denied to others; nor does it entitle any man or woman to set aside the laws of health which a civilized community has created and fixed for its own safety."

Christian Science

Mr. Everett W. Morgan, of Washington, D. C., representing the parent church, Christian Scientist, recently called the Association over long-distance telephone and voluntarily offered to place his organization behind us in fighting Senate Bill 93, known as the "faith healing" bill. He informed the Association that his division of the Church of Christ,

Scientist, believed in working with the medical profession, and not against it.

This sounds like good, common sense, and if, on looking into it, we find the offer of assistance reliable, the organization represented by Mr. Morgan should be accorded our gratitude. Fortunately, the bill in question is now "out of the way" and Mr. Morgan's support was not needed.

McIntyre Again

Mr. O. O. McIntyre, the brave little scandal-opath of Broadway, has just delivered to his readers another warning against the profession of medicine. This time it is a tip concerning the artificial sun-ray machines, which, according to the doughty columnist, are being discouraged by medical societies because they cure cancer. Mr. McIntyre doesn't make himself exactly clear.

In a syndicated article appearing in the Wheeling *Register* on Sunday, February 24, Mr. McIntyre has it that, "A medical society tries to stop the heavy sale of artificial sun-ray machines by intimating they are dangerous to those predisposed to cancer. Tush! They take patients away from doctors, maybe. . . ." We want to go Mr. McIntyre one better with a "Tush! Tush!"

Dr. Howard T. Phillips, of Wheeling, a member of the Ohio County Medical Society, has rallied to the defense of the profession, and in a letter dated February 24 and written to Mr. McIntyre he states in part: "Your statement is not only untrue but it is unkind. The average doctor is a most remarkable teacher—seeking to heal those whom he serves and then to instruct them that they may not need like services again—hence the doctor's untiring efforts in the prophylaxis against disease and the practice of preventive medicine."

Continuing, Dr. Phillips has written: "As a rule I enjoy your comments and I believe you write the thing as you see it, but the insinuation that the medical profession as a whole or any appreciable number of its components would withhold from the human race any health-giving or disease-preventing agency in order that they might have more patients to treat is not borne out by the undisputed fact that medical men have given to the world, and given without any remuneration whatsoever to the discoverers, such preventive measures as the prevention and cure of diphtheria by antitoxin, the prevention of typhoid fever by vaccine, the prevention of smallpox by vaccine, and the prevention of yellow fever by getting rid of the mosquito. These are but a few of the many instances in which medical men have given their time, fortune, and in some cases even their lives, in order that disease might be stamped out."

Dr. Phillips has hit the nail on the head and is to be commended for his voluntary defense of the profession. Whether or not this defense will accomplish anything remains to be seen. In the meantime, we desire to suggest to the New York Academy of Medicine that, any time Mr. McIntyre is in need of attention, they wire to York, Pa., for a "hex" doctor.

Heredity Comes to Fore

Heredity came to the fore again recently. Honorable H. C. Ogden, of Wheeling, who is editor of the Wheeling *News* and the *Intelligencer*, and whose father was a doctor, has written several editorials recently in regard to the aims and history of the profession that could scarcely be surpassed by any medical man. For clear understanding, logical reasoning and general excellency, they are at once models of modern elucidation. The practice of medicine is his debtor.

Mr. Ogden's editorial of February 23, pertaining to the "Faith Healing" bill then pending in the house of delegates, will be found on another page of this JOURNAL. Published with this editorial is a communication to the *Intelligencer* from Wade H. Guthrie, of the Christian Science committee on publication of West Virginia. Mr. Guthrie's communication, it might be said, brought forth the editorial from the pen of Mr. Ogden, and that is why it is given space in the WEST VIRGINIA MEDICAL JOURNAL.

Doctors and Politics

Members of the legal profession, who have had things pretty much their own way in politics since the first days of the republic, must be disconcerted by the political successes scored by those late comers, the doctors and dentists. In this state Dr. Royal S. Copeland, candidate for reëlection to the United States Senate, carried the five boroughs of New York City by the largest plurality of record. In Minnesota, Dr. Hendrik Shipstead, a dentist, also a candidate for reëlection to the Senate, won by the largest plurality in the history of the state. In West Virginia, Dr. Henry D. Hatfield, a physician, but a political veteran as well with service as governor of the state to his credit, defeated Senator Neely, the incumbent. In Cook county, Illinois, Dr. Herman

Bundesen, former health commissioner of Chicago, was elected coroner by the largest majority which any candidate ever received in that county.

Possibly a close search of the returns might show other doctors and dentists elected to offices not so conspicuous, but the triumphs mentioned are sufficient. Are we to have a medical bloc in Congress? Do the voters feel that the physicians and dentists are less partisan than other men, more concerned with the welfare of men? Or do they reason that if a placebo must be administered every so often to the country it should come from the proper hands?

No physician has ever been president, though anybody who was brought into the world and through the first decade by a family physician knows that there have been plenty of doctors noble enough to be president, with enough left over for free distribution to members of Congress. But the family doctor and general practitioner of the past had no time to give to politics. He had little enough time to give to sleep or to his family. Perhaps the first doctor to be elected president will remember what strenuous demands were made upon the old-fashioned doctor's time and strength. Many delegations, many organizations, many excursions now seem to feel that the president of the United States is a general practitioner, accessible to anybody who rings the bell with the notion of shaking hands. The first physician who lives in the White House may be able to correct the superstition that the president, by virtue of a handshake, can cure chronic dimming of prestige in the home town.—*New York Telegram.*

The Nature of Pepsin

Most of the efforts to "purify" enzymes have resulted in the separation of products bearing the characteristics of proteins. This has been conspicuously true of the amylolytic group. It appears that the higher the degree of purification of the amylases, the more nearly do they approach the proteins in composition and properties. Not long ago it was shown that pepsin of high proteolytic power can be obtained by isoelectric precipitation. At pH 2.5, products showing a proteolytic potency of 1:65,000 were secured. The analyses of these products are characteristic of a protein. All fractions still possess proteolytic properties until they reach the stage when they are sufficiently small to diffuse through parchment or animal membranes. The gradual decrease of proteolytic activity of the enzyme itself is paralleled by loss of its complex protexin characteristics. —*Journal A. M. A.*, December 29, 1928, p. 2069.

LEGISLATION

Newspaper Protection

Below will be found a communication from Wade H. Guthrie, of the Christian Science committee on publication for West Virginia, which was published in the February 23 issue of the Wheeling *Intelligencer*. Following Mr. Guthrie's letter is an editorial written by Honorable H. C. Ogden, editor of the *Intelligencer*, in answer to the shallow argument set forth by Mr. Guthrie. Mr. Ogden's answer, which was given voluntarily, was published on the same day that the "Science" article appeared, and needs no further explanation, as it will speak for itself.

"Editor, *The Wheeling Intelligencer.*

"Sir:

"My attention has been called to an editorial in your issue for February 18, under the heading, 'A Bill to Destroy Professional Medicine.' Without a desire for controversy, I request that you give me space to make a statement that will serve to enlighten your readers as to the purpose of the bill in question, Engrossed Senate Bill No. 93.

"In the first place, from a careful reading of the editorial, I am impressed with the idea that the *Intelligencer* is desirous of combating anything that would in any way jeopardize the welfare of the citizens of our state, and the writer appreciates and is in accord with that desire. I am certain that, after careful consideration of the purpose, intent, and limitations of this bill, it will be seen that there is nothing to fear from it.

"It is necessary to refer briefly to efforts in the past in order to show that the measure presented to and passed by the senate is not in the class of 'surprise legislation,' nor is it unusual in its provisions. The present Medical Practices Act (Chapter 150, Barnes' Code, Edition 1923) was enacted by the 1913 session of the legislature, and I am informed that the act as passed was prepared and sponsored by the American Medical Association. In nearly every session of the legislature since 1913 there has been presented a similar amendatory measure either as an amendment to a bill being considered or as a separate measure, such as the bill now under consideration.

"The efforts in the past and the present effort are based on the same purpose, and that purpose is to harmonize sections 8-a and 9 of Chapter 150 (the Medical Practices Act) with Article III, Section 15, of the Constitution of West Virginia, which are in

conflict when the treatment of human ailments by prayer is inseparably incorporated into and is a part of the principles of religion, as is the case in Christian Science. To make this conflict plainly apparent, I submit the following:

"Section 9 of Chapter 150 sets out the 'Qualifications of Physicians,' in which it is stated that only those who have graduated from some specific school of medicine and have passed the requirements and examinations of the State Board of Health are permitted to practice medicine and surgery, which practice is defined by section 8-a of the same chapter as follows:

" 'The term 'practice of medicine and surgery' as used by this act shall be construed to be treatment of any human ailment or infirmity by any method. To open an office for such purpose or to announce to the public in any way a readiness to treat the sick or afflicted shall be deemed to engage in the practice of medicine and surgery within the meaning of this act; *provided*, this clause shall not apply, however, to regularly registered optometrists.'

"It can be readily seen that the use of the words, 'by any method,' viewed from the standpoint of treatment by prayer as a religious doctrine, sets up a conflict with the following guarantee of religious freedom, contained in Article III, Section 15, of the Constitution:

" 'No man shall be compelled to frequent or support any religious worship, place or ministry whatsoever; nor shall any man be enforced, restrained, molested or burthened, in his body or goods, or otherwise suffer, on account of his religious opinions or belief, but all men shall be free to profess, and by argument, to maintain their opinions in matters of religion, and the same shall, in no wise, affect, diminish or enlarge their civil capacities; and the Legislature shall not prescribe any religious test whatever, or confer any peculiar privileges or advantages on any sect or denomination, or pass any law requiring or authorizing any religious society, or the people of any district within this State, to levy on themselves, or others, any tax for the erection or repair of any house of public worship, or for the support of any church or ministry, but it shall be left free for every person to select his religious instructor, and to make for his support, such private contract as he shall please.'

"Engrossed Senate Bill No. 93 proposes to remedy this plainly apparent conflict by inserting in Chapter 150 a new section, to be known as Section 9-a, which reads as follows:

" 'None of the provisions of this chapter or of the laws of this state regulating the practice of medicine and surgery shall apply to persons who only practice Christian Science or the religious tenets of their church without the use of any drug or material remedy.'

"It is impossible to correctly construe this measure as repealing any of the laws concerning sanitation and contagion, or as affecting any law on the statute books, excepting the degree to which it affects the laws regulating the practice of medicine and surgery, *i.e.*, those laws which define such practice and govern the qualifications and license requirements for those deemed practitioners of medicine and surgery. Those exempted by the bill from the laws regulating the practice of medicine and surgery are plainly identified as those who only practice the tenets of their religion and such practice must be 'without the use of any drug or material remedy.' I am sure the *Intelligencer* will agree that the practice of medicine and surgery is impossible without the use of material means, and, on the other hand, it is certainly not intended that one should be required to take a medical course and pass an examination thereon before the State Board of Health before being permitted to pray for the recovery of the sick.

"In closing, I should like to state that the practice of Christian Science does not endanger the public health; that those who practice Christian Science healing only do so at the request of those who come to them for aid; that Christian Scientists only ask that they may freely resort to the healing method of their choice—a right which is constitutionally theirs; and that they have no desire to force or attempt to force the acceptance of their choice by others. That the foregoing statements are true is substantiated by the fact that at least forty of the United States, in their laws defining the practice of medicine and surgery, have embodied provisions, similar in import to Engrossed Senate Bill No. 93, which protects the practice of Christian Science, thereby recognizing treatment by prayer as being distinct and apart from medical practice.

"Very truly yours,
"WADE H. GUTHRIE,
"Science Committee on Publication
for West Virginia.
"Charleston, February 20, 1929."

Attack on the Medical Practice Act

"In another column of the *Intelligencer* today appears a communication from Mr. Wade H.

Guthrie, of Charleston, who represents the Christian Science Committee on Publication for West Virginia. The *Intelligencer* gives space to this communication for the purpose of presenting as well as can be presented the argument for the bill now before the West Virginia Legislature to exempt the practitioners of Christian Science and other beliefs from the effect of the general medical practitioners law.

"The *Intelligencer* invites its readers to read this communication, and to reflect upon it. It will be observed that the author bases his contention for the privilege of exempting certain persons from the sane and salutary laws, regulating the practice of medicine, solely on the ground that these persons propose to practice medicine as a part of a religious belief; also that the author quotes Article 3, Section 15, of the Constitution, which guarantees freedom of religious belief and religious worship.

"It is hardly worth while seriously to combat a contention of this kind. The Constitutional guaranties of freedom of religious belief do not guarantee freedom of religious practices, when those practices run against the rules of health and safety, which communities have established for their own protection.

"To believe a thing is one thing.

"To practice that thing to the injury of another is quite a different thing.

"No man has the constitutional right to engage in a practice, whatever his beliefs may be, that has been determined by the large majority of citizens to be hurtful to other citizens, and to the community at large. There may be, and there doubtless are, a great many people in the United States, much more numerous than those who wish to practice certain kinds of healing, who believe that the use of a little wine, or a great deal of wine now and then, might be helpful to them. But the Constitution of the United States does not give them that privilege, and, in fact, distinctly prohibits it. To carry the illustration a little further, there is, in the wilds of Australia, a race of pleasant individuals who conceive that their opportunities for happiness in a future life are greatly increased by the number of enemies they are able to kill and the number of human heads they are able to take and hang up in their rude huts. It is hardly to be supposed that, if a colony of head-hunters of Australia should establish themselves in a civilized state, they would be long tolerated because of their religious belief. In India, two hundred years ago, another precious sect, practitioners of Thugery, believed it to be their religious duty to waylay and murder travelers. The British government didn't hesitate long to suppress this sect when it began to establish authority in the Indian territories.

"These illustrations are, of course, far-fetched, but they show what absurd extremes may logically result from the principle that religious belief exempts an individual from the application of the ordinary laws made by society to protect itself.

"Now let us return to Senate Bill No. 93, which reads as follows:

" 'None of the provisions of this chapter or of the laws of this state regulating the practice of medicine and surgery shall apply to persons who only practice Christian Science or the religious tenets of their church without the use of any drug or material remedy.'

"The intent of this, it is plainly to be seen, is to set aside the entire medical practices act for the benefit of certain individuals who do not claim any knowledge whatsoever of the science of medicine and surgery, and to enable them to practice medicine or healing without acquiring any knowledge, and without the use of any of the methods or means which the experiences of ages has put at the command of regular practitioners.

"What is the practice of medicine?

"The first and most essential thing is the recognition and correct diagnosis of disease.

"How can any untrained healer discriminate between the early stages of a case of ordinary rash, or scarlet fever, or of measles, or of smallpox? And suppose this bill becomes a law. Suppose in a city of West Virginia a case of smallpox in early stages is introduced and falls into the hands of one of these healers. What protection would the entire community have from a sudden and widely spread epidemic of smallpox, developed before regular practitioners and regular city health officers have a chance to come into contact with the cases? What protection would we have against an epidemic of any contagious disease, of diphtheria, infantile paralysis, and many others that are always at hand to threaten the lives of our families? So far as our health departments are concerned, they might as well be shut up. The efficient state health organization created during the past twenty years might as well be wiped out as to admit the absurd theory that a mystic faith in healing, and an abundance of confidence, qualify any individual who feels so called to diagnose and to treat disease.

"The practice of medicine, as it stands today in West Virginia and in every other civilized state, is the result of over three thousand years of observation, intensive study, and painful experiment. Devoted men in every advanced nation have given their lives and, in many cases, voluntarily sacrificed them, to build up the vast total of historical knowledge, and of recorded observation, and of delicate and painstaking experiments, that are embodied in the modern practice of medicine and surgery. No other profession has at its command so rich a fund of human experience. What is more, the scientific practice of medicine during the past hundred years has so identified the origins of disease and so developed their control that the span of human life has been more than doubled. Many deadly diseases which, a few centuries ago, ravaged mankind, have been practically made harmless. The control of typhoid, of diphtheria, of smallpox, of tuberculosis, and many other plagues has been firmly established in the large majority of cases. These things have been done by men who have studied long hours, weeks, months and years; who have scientifically observed; who have experimented in laboratories, and who have risked and sacrificed their own lives in observation.

"They have not been done by hysterical pleaders with the Lord, or itinerant fakers.

"The proposal to brush aside, in West Virginia, this great wealth of information and experience, and to degrade medicine to the level of a mere cult or belief, is a wrong so absurd that it is hard to believe that it will receive any further serious consideration in the West Virginia Legislature."

Cod Liver Oil

The discovery of at least two specifically potent food factors, vitamins A and D, in cod liver oil within comparatively recent years has completely altered the attitude of scientific investigators, and laymen, as well, toward this product that long had a place in dietotherapy on the basis of essentially empirically founded impressions. It is true that cod liver oil functions as a readily digested and utilized fat and thus as a source of energy; yet an ounce yields little more than 250 calories. So far as present knowledge is concerned, the vitamin content of cod liver oil constitutes its chief claim for consideration in treatment.—*Journal A. M. A.*, December 29, 1928, p. 2080.)

OBITUARY

J. W. Rickey, M.D.

Dr. J. W. Rickey, of Moundsville, an honorary member and one of the oldest members of the West Virginia State Medical Association, died at his home at 8:10 o'clock on the morning of January 24. He had been in active practice since 1873 until about one year ago, when he was incapacitated by the ravages of old age and the strain of his strenuous application to service.

Dr. Rickey was born at Harveys, Greene county, Pennsylvania, on April 14, 1842, and spent his childhood upon his father's farm. His first contact with Marshall county was made in 1873, when he began the practice of medicine at Glen Easton. Six years prior he was married to Miss Clara B. Williams, of Virginia. He remained at Glen Easton for 15 years and then moved to Moundsville. Since 1902 he has been one of Moundsville's most prominent physicians and outstanding citizens.

Dr. Rickey received his early education in the schools of Waynesburg, Pa., and later at Waynesburg College. Later he studied medicine in Cleveland, Ohio, where he received his degree in medicine and his license to practice. In addition to his connection with the state medical association, he was a member of the First Presbyterian Church of Moundsville, the Independent Order of Odd Fellows, and the Junior Order of United American Mechanics.

Funeral services were held at the family residence on the afternoon of January 26 and interment was made in the Mount Rose cemetery. Dr. Rickey is survived by three sons and one daughter, and by a host of friends in the profession througout this state.

John Lindsay Dickey, M.D.

Dr. John Lindsay Dickey, one of Wheeling's most prominent members of the medical profession, passed away at his home on February 6, following an illness of one week's duration. Death was attributed to heart trouble. Dr. Dickey was 74 years of age at the time of his death, and was next to the oldest living past-president of the West Virginia State Medical Association, having been elected at Weston in 1899.

Dr. Dickey was born in Wheeling on January 23, 1855, and received his early education there. Later he was graduated from Washington and Jefferson College, in 1876, with the degree of A.B. In 1879 he received the degree of A.M. from the

same institution. He received his M.D. degree from Jefferson Medical College in 1883, and has practiced since that time in Wheeling. He was a member of the International Medical Congress of 1887 at Washington, D. C., of 1890 at Berlin, and of 1894 at Rome, Italy. In addition, he served two terms as a member of the state board of health.

Funeral services were held at the home on February 8 and interment was made in the Stone Church cemetery at Elm Grove.

Edward S. Buffington, M.D.

Dr. Edward Stanard Buffington, 81 years of age, died at his home in Huntington on the afternoon of February 24. His death was sudden and was attributed to heart failure. Dr. Buffington was the only honorary member of the Cabell County Medical Society, and had been a member of the West Virginia State Medical Association for more than fifty years.

The deceased was born in Huntington in 1847, the son of Peter Cline Buffington, Huntington's first mayor. Dr. Buffington also served at one time as mayor of the Cabell county seat. He attended the Virginia Military Academy and joined with the Confederate forces in the defense of Richmond. Later he attended Jefferson Medical College, graduating in 1872. He was officially licensed to practice his profession in West Virginia in 1881.

Dr. Buffington is survived by one son, Richard Lyell Buffington, of Fayette county, Kentucky. One brother and one sister also survive. The deceased was one of Huntington's most prominent citizens and leaves a host of friends in and out of the profession throughout the state to mourn his death.

Steven Douglas Few, M.D.

Dr. Steven Douglas Few, of Parsons, died at his home there on January 23, following a five-day illness with double pneumonia. He was 69 years of age at the time of his death and had practiced medicine in West Virginia for more than 25 years. The deceased is survived by his wife and two stepsons, Paul and Howard Dudley, of Parsons.

Dr. Few was a member of Parsons Lodge, A. F. and A. M., and also of the Barbour-Randolph-Tucker Medical Society. Funeral services for Dr. Few were held at Parsons on January 25. The deceased was well known throughout the central part of West Virginia, and had been a member of his county society and the West Virginia State Medical Association since 1907.

James Henry Thornbury, M.D.

Dr. James Henry Thornbury, of Crites, Logan county, West Virginia, died at his home there on December 12, following an attack of pneumonia. He was 74 years of age, having been born in 1854, and was well known throughou the southern part of this state.

Dr. Thornbury was graduated from the Eclectic Medical Institute of Cincinnati in 1891 and was licensed the same year to practice medicine in West Virginia. In 1915 he affiliated with the Logan County Medical Society and continued his membership for the remainder of his life. Had he lived one more year, Dr. Thornbury would have been eligible for honorary membership in the West Virginia State Medical Association.

COUNTY SOCIETY NEWS

Marion County

Dr. H. S. Keister, of Fairmont, was elected president of the Marion County Medical Society at the regular meeting held in Fairmont on the evening of January 29. Dr. Keister has succeeded Dr. C. M. Ramage, who served during 1928. Other officers of the Marion society who were elected on January 29 include Dr. J. J. Jenkins, vice-president; Dr. Philip Johnson, secretary, and Dr. C. W. Waddell, treasurer.

The new board of censors of the Marion County Medical Society is composed of Dr. J. B. Clinton, Dr. J. M. Trach, and Dr. C. M. Ramage. Delegates to the state meeting at Martinsburg will be Dr. E. P. Smith, Dr. L. D. Howard, Dr. H. S. Keister, and Dr. Philip Johnson. Alternates will be Dr. W. A. Welton, Dr. J. B. Clinton, and Dr. C. L. Holland.

The scientific paper of the evening was presented by Dr. Dorsey Brannon, of Morgantown, on "Early Recognition of the Common Major Urological Conditions." This was an excellent paper and was well received by the members of the society.

PHILIP JOHNSON, Secretary.

Logan County

Dr. C. A. Martin, of Amherstdale, was elected president of the Logan County Medical Society at a banquet held at the La Touraine Café, Logan, on Wednesday evening, January 23. Dr. T. J. Ferrell, of Chapmanville, was elected vice-president, and Dr. P. B. Wingfield, of Logan, was reëlected as secretary-treasurer.

Five members of the Logan society have been reported as having moved from the county during the past year. They are: Dr. O. G. McConnell, of Blair; Dr. R. A. Bell, of Holden; Dr. G. G. Scruggs, of Whitman Creek; Dr. J. P. Gentile, of Emmett, and Dr. J. M. Crymes, of Logan. The Logan society has also reported the death of Dr. J. H. Thornbury, who died on December 12 of pneumonia.

P. B. WINGFIELD, Secretary.

McDowell County

The regular monthly meeting of the McDowell County Medical Society was held in the offices of the Welch Hospital No. 1 on the evening of February 13, 1929, with Dr. D. D. Hatfield, of Yukon, presiding. The scientific paper of the evening was presented by Dr. R. C. Newkirk, of Twin Branch, on "Remarks Pertaining to Coal-Field Obstetrics." His paper was entirely original and interestingly presented. He first gave statistics relative to the occurrence of normal and abnormal deliveries, lacerations, and post-partum infection, and mortality of mother and child.

Following this, Dr. Newkirk described the disadvantage and inconvenience associated with obstetrics in this field, and gave his own method of caring for a normal delivery; taking up every step in detail from the initial call to his daily visits for the first five days post-partum and after that every other day. He then enumerated some of the faults which the average doctor is likely to develop or acquired. In conclusion he stated that in no way did he wish to give the impression that what he described was the only correct procedure, nor that it should be adopted. He further asserted that he wished his remarks to be taken impersonally.

Dr. Newkirk's paper was discussed by Drs. W. C. Hall, J. H. Anderson, H. G. Camper, C. E. Dyer, and J. C. Killey, who expressed their opinions and appreciation of the essay. Dr. A. G. Rutherford disagreed with Dr. Newkirk as to the advantage of vaginal examination over rectal, to which Dr. Newkirk replied with explanations and reasons for the vaginal rather than the rectal examination in coal-field obstetrics.

A letter of application for membership in the society was received from Dr. Charles B. Bailey, of Baileysville, and turned over to the board of censors. The meeting adjourned at 9:15 o'clock.

A. G. RUTHERFORD, Secretary.

Barbour-Randolph-Tucker

Dr. and Mrs. W. W. Golden, of Elkins, sailed from New York on February 7 for an extended visit to Switzerland, Italy, Palestine, and other points of interest on the continent.

Dr. J. C. Irons, of Elkins, formerly of Norton, left on February 8 for a month's vacation in Florida. En route, Dr. Irons spent a few days in Washington, D. C., as the guest of his daughter.

Mercer County

The Mercer County Medical Society held its regular meeting and annual election of officers in the directors' room of the Municipal Building, Bluefield, at 8 o'clock P.M. on the evening of January 30. Dr. B. S. Clements, of Matoaka, was elected president; Dr. C. J. Reynolds, of Bluefield, vice-president; Dr. H. G. Steele, of Bluefield, secretary, and Dr. C. T. St. Clair, Bluefield, treasurer. Dr. W. H. Wallingford, of Princeton, and Dr. A. H. Hoge, of Bluefield, were named as delegates to the state meeting, with Dr. David Littlejohn, of Charleston, and Dr. C. C. Ballard, of Gap Mills, as alternates. Drs. A. H. Hoge, R. O. Rogers, and W. H. Wallingford were elected to the professional relations committee.

An amendment to the by-laws of the society was proposed by Dr. R. O. Rogers, whereby the society would meet only four times each year instead of once each month as it is now provided. This amendment was placed on the table for one month and will be voted upon at the next meeting.

The scientific paper of the evening was presented by Dr. P. R. Fox, of McComas, on "The Complications of Influenza." Among those who discussed this paper were Dr. C. C. Ballard, Dr. R. O. Rogers, Dr. C. M. Scott, Dr. C. T. St. Clair, Dr. J. B. Kirk, Dr. J. Vermillion, Dr. E. W. Horton, Dr. Johnson of Tazewell, Va., Dr. Ritter of West Graham, Va., Dr. A. E. Amick, Dr. A. H. Hoge, and Dr. O. S. Hare. Many important points concerning influenza and its treatment were brought out in this discussion which proved very valuable.

Those present at the meeting were Drs. F. S. Richmond, G. T. Thornhill, J. H. Craft, C. B. Lepper, C. C. Ballard, J. Vermillion, A. H. Hoge, C. T. St. Clair, J. C. Kirk, R. R. Stuart, John McGuire, R. O. Rogers, W. H. Wallingford, H. G. Steele, C. M. Scott, E. W. Horton, A. E. Amick, O. S. Hare, P. R. Fox, W. H. St. Clair, C. T. Reynolds, and E. M. Tanner. Visitors were Dr. Johnson and Dr. Ritter.

The meeting adjourned at 10 o'clock P.M., after which the members enjoyed a delightful smoker. Sandwiches, beer and soft drinks, together with cigarettes, were served during this pleasant social hour.

Dr. Harry G. Steele, secretary of the Mercer County Medical Society, has just announced that the Clinch Valley Medical Society expects to meet in Bluefield on or about May 9, 1929. The date has not been definitely determined as yet, but if any change is made in the above it will be announced later in these columns.

An innovation for county society meetings has been arranged by Dr. H. G. Steele, of Bluefield, secretary of the Mercer County Medical Society, and will take place at the next meeting of that organization in the form of "questions and answers." These will pertain to scientific medicine and the program has been arranged as follows:

1. Dr. E. W. Horton, Bluefield: (*a*) What is the length of the umbilical cord in centimeters at birth? (*b*) How does the length of the cord correspond with the length of a full-term child, in centimeters, at birth? (*c*) What complications may arise as a result of undue length of cord?

2. Dr. B. S. Clements and Dr. W. W. Harloe, of Matoaka: (*a*) The history of a patient approaching full term. She was admitted to the hospital a few hours previously, suffering with a mild bleeding of a causeless, symptomless type. (*b*) What is the diagnosis? (*c*) What form of treatment should be instituted?

3. Dr. E. M. Tanner and Dr. C. J. Reynolds, of Bluefield: (*a*) A patient with a history of being between five and six months pregnant, complaining of severe pain in the right ileo-lumbar region. Condition is associated with fever, a rapid pulse, a leukocytosis of 17,000, and urine (catheterized specimen) containing from eight to one hundred or more pus cells. (*b*) What is the diagnosis? (*c*) With what condition may it be confounded? (*d*) Mention the points in the differential diagnosis. (*e*) How should it be treated? (*f*) Is indication of labor in these cases necessary as a rule?

4. Dr. T. E. Vass and Dr. C. M. Scott, of Bluefield: (*a*) How is septicemia of autogenous origin explained? (*b*) What are the predisposing causes of puerperal septicemia? (*c*) Has chemical therapy of the intravenous type proved of any value in puerperal septicemia?

H. G. STEELE, Secretary.

Logan County

An interesting meeting of the Logan County Medical Society was held in Logan on the evening of February 20, at which time Dr. E. R. Logan, of Omar, read a paper on "Influenza," reviewing this subject in a very concise and delightful manner. It brought forth a multitude of discussions. Although no definite conclusions as to the mode of transmission and treatment were reached, the discussion was very beneficial.

The second paper was read by Dr. David Littlejohn of the State Health Department, Charleston, on "Communicable Diseases and Their Mode of Transmission." In this he classified diseases that were transmitted from person to person, such as whooping cough, measles, etc., and those transmitted through carriers, such as diphtheria and typhoid. He also brought out the fact that whooping cough produced a very alarming number of deaths and this was in the early age period. The same was true for measles, and it was further shown that if the child was protected in early childhood from such diseases, the mortality rate would be reduced, even with the same morbidity rate.

The society considered four legislative bills now pending before the state legislature, and went on record as opposing the chiropractor house bill No. 263, the faith-healing senate bill No. 93, and the country-doctor house bill No. 18. Each member was urged to use his influence in defeating these measures. The society was in favor of house bill No. 130, concerning marriage licenses.

P. B. WINGFIELD, Secretary.

Ohio County

The Ohio County Medical Society held an interesting meeting in the Wheeling Elks' Club at 8:30 o'clock on the evening of February 1, with an excellent attendance. The scientific paper was presented by Dr. Max Minor Peet, of the University of Michigan, Ann Arbor, on the subject, "The Treatment of Intracranial Injuries." Dr. James Schwinn and Dr. J. O. Rankin, both of Wheeling, led the discussion.

The February 15 meeting of the Ohio County Medical Society was also held in the Wheeling Elks' Club, with Dr. William Cullen Bryant, of Pittsburgh, as the scientific essayist. His paper was on the subject, "Sacral Anesthesia in Urology," and the discussion was led by Dr. J. R. Caldwell and Dr. R. D. Gill, both of Wheeling. A number of im-

portant legislative matters were considered at this meeting.

Dr. DeForest P. Willard, of Philadelphia, Pa., was the scientific essayist at the March 1 meeting of the Ohio County Medical Society, which was held in the Wheeling Elks' Club. His subject was, "Early Diagnosis and Treatment of Congenital Deformity." The discussion was led by Dr. J. O. Rankin and Dr. C. M. Truschel. Following the meeting a buffet luncheon was served to the members and guests present.

H. W. BOND, Secretary.

Dr. D. B. Best, of Wheeling, is convalescing at Asheville, N. C., following an extended illness. He is now able to be out for two hours each day, and is reported to be doing nicely.

Monongalia County

The regular meeting of the Monongalia County Medical Society was held at 8:30 o'clock on the evening of February 5 in the library of the Junior High School building at Morgantown. The scientific paper of the evening was presented by Dr. C. Ben Pride, of Morgantown, on the subject, "Perforated Gastric and Duodenal Ulcer." This essay was most interesting and was discussed by many of the members present.

G. R. MAXWELL, Secretary.

Cabell County

An innovation in the work of professional relations has been introduced by the Cabell County Medical Society in the nature of broadcasting health talks for the lay public on each Saturday evening. This was started on February 23, and forty-five minutes each Saturday evening will be devoted to the program furnished by the Cabell county organization. A part of this time will be used for lecture purposes and the remainder for questions and answers.

The doctor who speaks over the radio may be any member of the Cabell County Medical Society and is introduced as "Doctor Goodhealth." This name was adopted in order to steer clear of anything that might smack of advertising. The service is furnished through the courtesy of Station WSAZ, of Huntington.

At the conclusion of each program the announcer states as follows: "You have just listened to a talk by Dr. Goodhealth, a member of the Cabell County Medical Society, which is a constituent organization of the West Virginia State Medical Association and the American Medical Association."

Kanawha County

The February 5 meeting was called to order by the president, Dr. R. H. Walker, at 8 P.M., with seventy members and twenty guests present. The society was favored with the attendance of several physicians who were members of the Senate and House, as well as a number of physicians from neighboring clinics.

The society was entertained with a very exceptional program by the honorary speakers of the evening: Dr. William O'Neill Sherman, chief surgeon to the Carnegie Steel Company of Pittsburgh, gave a splendid talk on the subject of "Fractures In and About the Joints." Dr. Henry D. Hatfield, United States Senator-elect, discussed Dr. Sherman's paper in his unique manner, and Dr. F. B. Harrington, chief surgeon to the Weirton Steel Company of Weirton, gave additional discussion to both Dr. Sherman's and Dr. Hatfield's lectures.

Dr. Sherman's lecture was delivered in an elegant fashion. His knowledge of the subject, together with his manner of address, gave impetus to the reaction of his listeners. He went into detail concerning the treatment of traumatism, and urged the profession to renew their efforts in the treatment of fractures so as to obtain better anatomical and functional results. His argument for open reduction of fractures which do not respond to the more conservative types of treatment was sane and logical. At the close of his address, he presented a lantern-slide discussion of various modes of technique used by himself in certain kinds of fractures. He likewise gave the technique used by him in open reduction. His entire address was filled with many worthwhile facts which, no doubt, caused all those present to stop and think.

Dr. Hatfield gave a very interesting discussion of Dr. Sherman's oration, as well as a résumé of the history of early surgery in southern West Virginia, in which Dr. Hatfield played a leading rôle. At the end of his discussion, he showed x-ray pictures of severe injuries which had been treated by him by means of open reduction. The results obtained were satisfactory and received the admiration of Dr. Sherman and the entire assemblage.

Dr. Harrington added helpful remarks to both Dr. Sherman's and Dr. Hatfield's lectures.

Discussion of the subject was made by Dr. J. E. Cannaday, Dr. A. G. Rutherford of Welch, Dr. E. Bennette Henson, Representative B. S. Rankin of Tunnelton, Dr. J. A. Guthrie of Huntington, and Dr. James McClung of Richwood.

Dr. Sherman was requested to inform the society of his part in contributing to His Majesty, King George of England, during his recent illness. This request was granted, and brought forth added discussion on the value of Dakin's solution.

The secretary called attention to the next meeting on the evening of February 19. He also announced the following new members of the society:

Dr. Thomas Nale, Charleston.

Dr. C. G. Scruggs, Putney.

Dr. A. W. Milhon, Nitro.

Dr. T. B. Gordon, Widen.

Due to the lateness of the hour, further business was postponed until the next meeting and the society adjourned until 8 P.M., February 19.

The February 19 meeting of the Kanawha Medical Society was held in the auditorium of the Public Library building with 50 members and visitors present. Dr. R. H. Walker, president, presided at the meeting, and the scientific essayist was Dr. Albert E. Goldstein, urologist, of Baltimore, Md. His paper was presented upon the subject, "Diagnosis and Differential Diagnosis of Lesions of the Upper Urinary Tract," accompanied by lantern slides.

Discussion of Dr. Goldstein's paper was carried on by Dr. John W. Moore, Dr. G. G. Irwin, Dr. M. I. Mendeloff, Dr. A. C. Lambert, Dr. J. U. Rohr, Dr. W. A. McMillan, and Dr. Ray Bobbitt of Huntington. Dr. B. S. Rankin, of Tunnelton, also discussed the paper and talked briefly about some of the most important medical bills now pending before the state legislature.

RUSSEL KESSEL, Secretary.

Fayette County

The Fayette County Medical Society met at Oak Hill, West Virginia, February 13, 1929; Dr. M. C. Borman of Montgomery, president, presiding. Dr. G. A. Smith, of Montgomery, read a paper on "The Significance of the Pupil in Diagnosis." Dr. R. S. Peck, of Cannelton, read a paper on "Endocrines and Behavior." Dr. E. E. Jones, Mt. Hope, reported further on a case of "Hematemesis of Unknown Origin." Dr. William R. Laird, Montgomery, reported three cases of ascites. Each of the patients had had previous operations and diagnosed tuberculosis peritonitis. Fifty-two per cent of the membership were present at the meeting.

H. A. WALKUP, Secretary.

Hair-A-Gain

This is an alleged enhancer of beauty, sheen, luster, color, texture, contour and abundance of the scalp and hair. Georgia O. George, of Los Angeles, claims to be the inventor, originator and sole manufacturer of this preparation and of MaskO'Uth Liquid Mask and Scientific Systemethod. "Hair-A-Gain" is advertised in newspapers and by radio broadcasting stations WMCA, New York, WHK, Cleveland, WEBH, Chicago, KMOX, St. Louis, KFXF, Denver, and various stations on the Pacific Coast. The A. M. A. Chemical Laboratory reports that Hair-A-Gain Liquid Shampoo is marketed in bottles containing about 240 c.c. of a yellow, turbid, viscous liquid, possessing a faint odor suggestive of tar and a marked insoluble residue. From its examination the Laboratory concludes that the preparation is essentially a water solution of ordinary soap. Probably it is the tar, or tarlike substance, that is incorporated in the Hair-A-Gain Paste that has been responsible for such unpleasant effects as have been reported from its use.—*Journal A. M. A.*, December 22, 1928, p. 2012.

Serious Illness Caused by Copper Cleanser

Investigation of the sudden serious illness of a number of persons in a hotel in a city in the central part of New York revealed that they were suffering from cyanide poisoning. A sample of a cleanser used to clean copper pots and pans was obtained and referred to the Dairy and Food Bureau of the State Department of Agriculture and Markets. Analysis showed a relatively large amount of cyanide. This fact was reported by the Bureau to the State Board of Pharmacy, which notified the manufacturers of the product that they must label their containers so that the word "Poison" and the name of the poisonous ingredient would appear in red ink on the label. This has subsequently been done.

Since the sale of this product for the purpose indicated can not be prohibited if it is properly labeled, users are cautioned that cyanides in any form are poisonous and may cause death by inhalation of the fumes, absorption through abrasions of the skin, or by being carried to the mouth on the hands.—*Health News*, New York State Department of Health, January 28, 1929.

LIBRARY OF THE COLLEGE OF PHYSICIANS

ANNOUNCEMENTS

American College of Physicians

The annual meeting of the American College of Physicians will be held at Boston from April 8 to April 12, according to an announcement just received from Dr. J. N. Simpson, of Morgantown, governor for this state. Dr. Simpson is anxious to increase the West Virginia membership in the American College of Physicians, and also he hopes that a large number of the members in this state will attend the Boston session.

Post-Graduate Course

An announcement has just been received by the JOURNAL, stating that an ear, nose and throat post-graduate course will be given at the University of Bordeaux, France, commencing July 22, 1929. The course will consist of surgery of ear, nose and throat, trans-maxillary and plastic surgery, and bronchoscopy. It is being represented in this country by Dr. Leon Felderman, of Philadelphia.

Study of Goiter

The American Association for the Study of Goiter will hold its annual session at Dayton, Ohio, on March 25–27, 1929, inclusive. Scientific sessions will be held at the Miami Hotel there, and this hotel will also be headquarters for the meeting.

Group Life Insurance

On page four of the advertising section of this issue of the JOURNAL will be found a full-page advertisement relating to the group life insurance plan considered at the Fairmont meeting last May. The committee to work out a plan for group life insurance for the members of the association has devoted considerable time and effort to this matter and is anxious to conclude its program as soon as possible. At the present time 381 members have applied for this form of insurance and approximately 200 more applications are needed before it can be put through. If you are interested, please turn to the advertisement on page four.

American Proctologic Society

The American Proctologic Society will hold its annual meeting in Detroit, Michigan, on May 13, 14, and 15, 1929. The Hotel Statler has been selected as headquarters for the scientific program and for the scientific and commercial exhibits. Membership in the association is open to any graduate of a recognized medical school who is a member of his county and state medical society and the American Medical Association, and who is especially interested in proctology.

Commencement Address

President Edwin A. Alderman, University of Virginia, will deliver the principal address at the ninety-first commencement of the Medical College of Virginia, Richmond, on Tuesday, May 28, 1929.

Congress on Mental Hygiene

The first International Congress on Mental Hygiene will be held in Washington, D.C., on May 5–10, 1929, according to a recent announcement by Clifford W. Beers, secretary-general. The Congress is said to be sponsored by a representative committee of mental hygiene experts, psychiatrists, educators, and distinguished citizens, representing almost every nation in the civilized world.

Chemistry Research

The Chemical Foundation, Inc., of New York City, has made a grant to the Medical College of Virginia, Richmond, to make it possible to employ, for a three-year period, a full-time expert to enlarge its present program of research in chemistry as related to medicine, surgery, and dentistry. The special laboratory for this work will also be considerably enlarged.

Neurological Institute

A gift of $150,000 to the Neurological Institute of New York; the opening of the out-patient clinics of the institute at the Medical Center, and the complete transfer in March of all the work of the institute to the Medical Center, were simultaneously announced recently by Mr. Robert Thorne, president of that institution.

Physicians' Guide Book

A guide book for physicians and medical students who intend to visit Hungary is being distributed *gratis* by the Cunard Line. It gives full information concerning the conditions under which members of the medical profession may continue their studies in Budapest, giving courses which may be taken up at the various clinics and universities. The book may be obtained by dropping a card to the Cunard Line, 25 Broadway, New York.

HOSPITAL NOTES

COÖPERATION OF HOSPITALS WITH THE WEST VIRGINIA COMPENSATION DEPARTMENT *

By C. L. HEABERLIN
State Compensation Commissioner
Charleston, W. Va.

If we should go back and leaf through the pages of history we would find that a vast majority of the achievements wrought for the betterment of mankind and civilization as a whole were obtained, to a great extent, through courage and coöperation. All great undertakings have been carefully planned by groups of clear-thinking, fair-minded individuals, and their achievements or successes have always been made possible through the coöperation of the various component units comprising the organization.

In mediæval times the Crusaders were successful, due to the infinite coöperation that existed in their ranks, and for us they preserved christianity and freedom. Columbus was able to discover this great continent of ours through the coöperation of that majestic queen, Isabella, and by the noble assistance of his personnel. Washington won for us our war for independence and enabled us to cast off the despotic yoke that King George the Third had placed about our necks. He was assisted by a few thousand brave Minute Men, together with the aid and coöperation of our friend, Lafayette, and the French government. Goethals was able to complete the Panama Canal only after he received the assistance of the great Gorgas and the United States government. This was a notable monument to coöperation, because the French, many years before, had failed in the same undertaking because they had not had the support of a man like Gorgas. Then, again, Napoleon lost at Waterloo, due to lack of coöperation among the members of his staff.

The success of the West Virginia Compensation Department, in its service to the injured employee as well as to the employer, does not depend wholly upon the ability of the compensation commissioner. It is necessary that his entire organization be cooperative and turn out the best work that it can as a single unit. Likewise, it is imperative that each hospital in the state, together with the local physicians, join hands and support him whole-heartedly in this work. I believe that there is coöperation between the department and the various hospitals throughout the state; however, the purpose of this paper is to renew friendships and to make our coöperation stronger.

Before going further, I want to state that we are obtaining coöperation from your various institutions, and we are truly thankful for this service. Yet I believe more beneficial service can be given. In order to obtain the best results we realize it is necessary for us to take the initiative. This we are endeavoring to do, and I am sure the injured employee will be benefited by the end result.

We realize that there are many changes that should be made in the department. However, it requires time to intelligently institute new measures to cure, so to speak, this malady. As the department develops, it must be revised accordingly.

It may be information to you gentlemen to know that, since the department was organized in 1913, all of the constructive changes have been brought about through the influences of members within the commission. We have not received constructive criticism from outside sources, and we have had to depend wholly upon our own initiative in bringing about changes which have proven beneficial to the hospitals and physicians doing work for us.

During the past year we have entirely reconstructed the medical department and have equipped it in a first-class manner. We have more than doubled its personnel. We have a complete x-ray outfit which is operated by a competent technician, and also have a full-time medical examiner to care for the routine work. This, of course, places your correspondence and business before a professional man who can handle the professional work more intelligently than the layman. Through our medical department I believe you are getting better coöperation than you have in the past, and I assure you that our doctors will coöperate with you to the maximum extent.

On November 1, 1927, as you all know, a new manual of fees was adopted by the department. This was first submitted to and received the approval of a committee composed of members of the West Virginia State Medical Association. Prior to this time, hospitals were only allowed $2.85 per day for the care of compensation cases. There was no doubt that this amount of money was inadequate to compensate the hospitals for the service rendered, and in many instances it cost the institution more than that amount to properly care for the injured employee. This was increased to $3.50 per day or $24.50 per week, and I am sure that this has contributed a great deal to the better attention which is given our

claimants at the present time. Then, too, under the old schedule you were not compensated for laboratory work of any kind, with the exception of x-ray pictures. We realized that, in certain cases, it was necessary to procure additional laboratory studies in the form of blood counts, urinalyses, Wasserman tests, and blood typing, in order to institute intelligent treatment and properly care for the patient. This, of course, is cared for in the new manual of fees. Likewise, you are now able to be paid for the application of plaster-of-paris casts as well as for blood transfusions. The department has commenced to reap proper reward from the establishment of the above increase of hospital fees, by means of obtaining better care of and attention to our claimants. This, in a measure, assists in the reduction of disabilities.

Our hospitals in the southern part of the state are doing a great deal of list work for the various companies in their immediate vicinity, and, according to a majority of their contracts, all services are rendered to the injured individual without cost to the department. In many instances we have found that proper x-ray study has not been given the injured man, or at least the department has been unable to obtain the information desired. In view of this fact, Hospital Order No. 1 was formulated and went into effect September 1, 1927. All of you, no doubt, are acquainted with this order. It has to do with x-ray examination at time of injury and at the time of discharge from the hospital. The department pays for these pictures when they are filed with us, together with other information as to the injured employee's condition. Many of the hospitals are coöperating with us in this matter; however, there are a few which are not supplying us with this information. I should like to impress upon your minds the necessity of this procedure, and would like for you to see to it that we are supplied with this information. I assure you that, if this order is strictly adhered to, you will be contributing to the welfare of the department as well as to the injured employee.

In the matter of x-ray examination, our medical department finds that, in several instances, x-ray studies made by some of our hospitals have been inadequate. We often find pictures taken in the anterior-posterior plane which completely miss the real pathology that is present. When they are made in the lateral plane the pathology is definitely established and recognized. This is likewise true in stereoscopic examinations of the head, shoulder, and in pelvic injuries. The extra cost to you for his work does not amount to more than the cost of the extra film, which is approximately eighty-five cents. By doing this small amount of extra work, quite often an injury may be properly treated so that no permanent disability results. Otherwise, the claimant may eventuate into a lifelong cripple and draw compensation for an injury which could have been corrected at the time the accident happened. We can not recommend too strongly the above x-ray procedure.

Many of the injuries received in this state are of the type of multiple injuries. We would like to impress upon your minds the necessity of complete reports in these cases. Often there are several of what are termed minor injuries associated with a very severe injury which, at the time of admittance to the hospital, are recognized and treated secondarily. Many months afterward the claimants come to our medical department for examination with regard to disability. Quite often they complain of more disability resulting from an injury not reported than they do of the regularly reported injury. This necessitates considerable expense to the department as well as a hold-up in the settlement of the claim so that the accident may be thoroughly investigated. It would be of great service to every one concerned if the hospitals and the physicians would go into detail in reporting these types of injuries.

Throughout the entire state we have but two hospitals which are keeping us in active communication concerning what they are doing to our claimants. These institutions give concise and complete reports to the local physician and send us a copy of their reports. These progress notes are received soon after the patient is admitted to the hospital, describing their condition thoroughly. Likewise, if at any time operative procedure is performed, a complete report is received by us. At time of discharge another report is sent, and each time the patient reports back for check-up we get the report as to his progress in convalescence. Then, when he has made his maximum improvement, we receive a report concerning their opinion as to the amount of disability that is present. We realize that this procedure requires a considerable amount of time and correspondence, but we believe it is well worth the effort not only to us but to every one concerned.

During the past year we have followed the course of rehabilitative surgery more than has been practiced in the past history of the department. The purpose of this work, of course, is to lessen disabilities

that are present. In all instances possible we have referred these cases to West Virginia surgeons and to West Virginia hospitals. A number of these cases which we have referred for operation have not been operated upon, and in several cases we have had no report from the surgeon or hospital as to the reason surgery was not employed. In this type of compensation work, as well as our routine work, we would appreciate reports concerning claimants' admission to the hospital, notes as to the type of operation performed, as well as the condition of the patient on discharge. In those cases where the claimant does not report before you in a reasonable time, we would appreciate that information so that we can again order them before you. At the time the order is given for the hospitalization a certain length of time is authorized for hospitalization. In some instances this period of hospitalization is not long enough and claimant should remain in the institution for a longer period of time. If you will only give us a letter to that effect, I assure you that authorization for hospitalization will be increased, if necessary.

Occasionally it is necessary to reduce a hospital's bill for service rendered, due to the fact that multiple charges for operating room, anesthesia, casts, etc., have been made. We usually find that they are quite unnecessary, but we rarely have information on file as to the reason. If at any time your bills are of this nature, we would like for you to make a notation as o why multiple charges are made, and I assure you that if you will only do this it will save both of us considerable time.

Recently we have had a great amount of difficulty in the way of charges for physiotherapy and electrotherapeutics. We have been forced to take the position that bills for this type of treatment shall not be paid unless so authorized by the commissioner or by the department. We realize the value of this type of treatment in selected cases; however, judging by the great amount of such work being done in the state at the present time, it was necessary for us to draw the line. If we pay one we must pay all, and we do not consider it the correct procedure at the present time. If any of you should have a selected case that you believe this treatment would benefit, no doubt you will be authorized to do the work if you will write in to us about it.

Our decision in this matter has been founded upon the report of the Research Group of the Committee on Traumatic Surgery, approved by the American College of Surgeons. Their report reads as follows:

"In a large majority of cases, physiotherapy as now rendered is of little value. If the insurance carrier were placed in the position either of accepting the general use of physiotherapy as now given or eliminating it entirely, it seems to be the opinion that the carrier, the employer, and the employee would all be better off without any physiotherapy. If, on the other hand, this type of treatment can be applied only to the carefully selected cases (which group would be comparatively small), and then given only for a reasonable length of time early in the case, it is believed that such application will give benefit. By reason of the commercialization of this type of treatment and the activity of various instrument-makers who produce and sell this type of apparatus, it would seem that a very careful study of this whole problem of physiotherapy application is justified. One of the many objections is that the treatment of the injured person becomes a mechanical treatment; the personality of the attending surgeon is lost; the patient himself fails to coöperate in the endeavor to restore function; he simply becomes a 'repeater' from day to day and week to week for the purpose of receiving a treatment that is agreeable to him and gives him a certain amount of comfort temporarily as it is rendered; and eventually he becomes a psychological patient as well as an anatomical one."

Buckhannon Hospital

Dr. L. W. Deeds, of Buckhannon, who held an interest in the Buckhannon Hospital for several years, has recently sold his interest to F. H. and Jessie Rusmisell. In the purchase of Dr. Deed's interest, the purchasers become the sole owners of the institution.

The Buckhannon Hospital was first owned by the late Dr. O. B. Beer, who died about two years ago in Florida. When Dr. Beer left Buckhannon, he sold his interests to the Rusmisells and Dr. Deeds. The hospital has been operated by the late owners and Mrs. Jessie Rusmisell was active in the general management for several years. Mrs. Rusmisell will continue in the same capacity.

Dr. Deeds has announced that he will remain in Buckhannon and that he will continue his practice of medicine and surgery.

PUBLIC HEALTH

Home for Feeble-Minded

Feeble-minded, diseased, and delinquent. These are the facts revealed by psychological examinations made by experts at the request of the State Health Department on patients in the Huntington and Logan county venereal disease clinics. Childish minds in adult bodies; the prey to temptation and disease—and no place to send them but back to the streets.

These are the conditions with which the State Health Department is constantly faced in its work throughout the state. This is particularly true of the bureau of venereal disease, which maintains twelve clinics in the various sections of the state for the free treatment of charity patients. A large number of these patients, when given mental tests, were found to be feeble-minded and lacking in moral judgment. Feeblemindedness is not insanity but arrested mental development, and these people can not be placed in institutions for the insane. Many showed a mentality of a child of eight or ten years, were easily led, and were utterly lacking in the knowledge of right and wrong.

Mental tests made in the clinic at Huntington revealed the fact that out of the fifty girls selected at random from the general attendance, only two were normal. The average age of the group examined was twenty-one, but their average mental age was only nine. Often coming from the environment of poor home surroundings, these girls had little or no training to fit them to cope with the world.

In forty-six states of the Union these girls could have been placed in institutions and given protection while being trained in simple trades. Since West Virginia is one of the two states without an institution for the feebleminded, the only course was to treat these girls and let them go back to the streets, knowing that sooner or later the same process must be gone through again, often with the additional burden of an illegitimate child.

When untrained, the feebleminded are always a burden to society, as they are devoid of the powers to judge between right and wrong and easily become the "cat's paw" for others. This is shown in the report on conditions in the state penitentiary recently made public, which disclosed the fact that 44.9 per cent of the inmates of that institution in 1920 had the mentality of a child of twelve years, while 28 per cent were decidedly feebleminded.

Frequently, in investigating vice conditions in the state, the health officials find feebleminded girls in houses of ill fame, held there by shrewd proprietors who contrive to keep them in debt or so intimidated that they are afraid to leave. Even if these girls do break away they soon drift back to the "easiest way" because of lack of willpower.

In one of the southern counties in the state the health authorities recently found an imbecile girl of fifteen, the mother of two illegitimate children and herself suffering from syphilitic infection. There being no place in the state to commit this girl, she was given treatment and turned loose to repeat her offense.

The state health department strongly favors the recommendation made by the budget commission to the legislature for the appropriation of funds for the building of a home for the feebleminded, feeling that this would be an economic asset. In such an institution feebleminded persons could be taught some of the simple trades, and, after having been trained in correct habits and ideals, could become self-supporting. Only the lower grade imbecile and idiot need to be segregated and kept in institutions permanently. This would help to solve the problem of many "repeaters" in the courts and clinics of the state.

Communicable Diseases

The battle being waged by the medical profession in West Virginia against disease shows a gain in many quarters, according to a report of Dr. David Littlejohn, of the state health department. All the communicable diseases, with the exception of cancer, whooping cough, and poliomyelitis, showed a decrease in the last two years. These three diseases showed not only an increase in cases but also an increase in death rate, cancer gaining from 53.6 deaths per 100,000 population in 1925 to 59.8 in 1927, while whooping cough rose from 10.1 in 1925 to 19.7 in 1927, and poliomyelitis, or infantile paralysis, showed a death rate of .68 in 1925 and 2.52 per 100,000 population in 1927.

The most marked decrease in deaths was showed from pneumonia, where the death rate dropped from 96 per 100,000 to 70.8 in two years, or a decrease of 399 deaths. Practically one half of the deaths occurred in children under five years of age.

The campaign carried on by the local and state health departments against diphtheria is showing results. Since 1922, when 349 deaths were recorded from this cause, the number has steadily

decreased until in 1927 there were but 136 deaths reported. However, as Dr. Littlejohn points out, all of these were absolutely unnecessary and resulted from negligence on the part of parents, as it has been proved that toxin-antitoxin will protect a child from diphtheria. A state-wide campaign has been waged for the immunization of children, with the result that 38,169 were given the protective serum in 1927. In Ohio county alone over 90 per cent of all the school children were given toxin-antitoxin.

Dr. Littlejohn urges the immunizing of children before they enter school, since the records show that, in 1926, 104 deaths out of the 162 occurred in children under five years.

State Laboratory

Dedicated to the new state hygienic laboratory, the January quarterly bulletin of the state health department contains interesting articles on the work of that branch of the health work, together with a number of pictures showing the various operations of the laboratory.

During the first ten months of 1928 the laboratory examined 17,109 specimens of all kinds, according to Dr. Elizabeth I. Parsons, director. This was an increase of more than a thousand over the examinations made during the twelve months of 1927.

Blood tests comprise over 50 per cent of the examinations made, the Kahn test being used instead of the Wasserman. Routine water tests form 25 per cent of the examinations, while diagnostic tests on diphtheria cultures, typhoid specimens, and other things complete the routine work.

The new laboratory, which was built by private individuals and leased to the state, contains a new machine for the making of silver nitrate. This is supplied free to all physicians and midwives, who are required by law to place a one per cent solution in the eyes of newborn babies so as to destroy germs which might cause blindness. By making its own silver nitrate ampules, the state expects to effect a considerable saving, since in the past it has had to purchase the supply from commercial firms.

It is hoped that, within the near future, the laboratory will be able to manufacture typhoid vaccine for free distribution. This is greatly needed in the fight against typhoid, which is very prevalent in West Virginia.

This number of the bulletin also contains interesting articles by Dr. Harry M. Hall, president of the West Virginia State Medical Association; Dr. David Littlejohn, and E. S. Tisdale, of the State Health Department, and Dr. P. B. Wingfield, director of the Logan county health unit.

FROM OTHER JOURNALS

One Kind of Advertising

The mails of December 26th brought us a post card reading:

"*The Light That Saved the King.* Of course you have read how the Prince of Wales on his arrival at King's bedside insisted upon modern methods of treatment, and a vibrator and ultra-violet light were used and the light produced immediate results and will doubtless be given credit for saving King's life.

"Now we have the ultra-violet lamps, all sizes and styles. We have one at only $47.50 you can experiment with if you can't afford to pay more. There may be some Kings in your section needing such treatment before winter ends.

"Shall we send you literature? If so, return card and we will understand."

Having seen a statement in a column conducted by "the world's highest paid editorial writer" to the general effect of that made in the first paragraph, that paragraph gave little surprise; though it would seem that appliance dealers, who make their livings out of doctors, should know them better than to think that the best doctors in Britain would know less about therapy than the Prince of Wales, or that they would accept him as senior medical consultant. Further, those who know anything of the Prince would not, for a moment, entertain the idea that he would presume to attempt to dictate what should be done.

There's more to it, though.

The *British Medical Journal* is a weekly. Each of its issues since that of December 1st has carried a good deal about the King's illness. Bulletins have been issued regularly since November 21st. In none of these have we been able to find any reference to the use of light therapy, or to any change made which would suggest that the Prince had usurped the functions of the King's doctors. We do find, however, in the issue for December 22d: "On Wednesday, December 12th, a few hours after pus had been located in the pleural cavity . . . the empyema was evacuated by rib resection under a general anesthetic that evening, and the reports on Thursday indicated that His Majesty had come

safely through the operation, and that drainage was proceeding."

So it is plain that the major therapy used on this royal patient is not that coming from a comparatively new and complicated machine, but from a surgical operation which was centuries old when Christ was born.

"The Light That Saved the King" was the light let in through a hole in his side.

The ultra-violet rays have proved their usefulness; their reputation can only be injured by this kind of advertising. "A good wine needs no bush." —*Southern Medicine and Surgery.*

"Water, Edema, and the Weather"

In an editorial under the above title in the *Journal A. M. A.* of December 29, 1928, occurs the following, which is interesting reading and may be correct:

A less drastic form of water retention seems to be brought about as a result of lowered barometric pressures. This is, of course, a phenomenon more nearly within the range of ordinary physiologic adjustments to our atmospheric environment. Smith, of the University of Chicago Physiological Laboratory, has reported that there is water retention in the bodies of dogs and rats when the barometric pressure is lowered from 2.6 to 9.8 cm. of mercury during a period of from twelve to forty-eight hours. This disturbance of the water balance of the body is accompanied by restlessness. Smith points out some implications from these experiments. The restlessness of various animals that is so often noted before a storm might be accounted for by the low barometric pressure and the consequent water retention. With an animal that is particularly sensitive to this condition, there is thus given a foreknowledge of approaching bad weather, so that migratory birds are away before there is any sign in the sky of a weather change. Hogs usually bed themselves down and cattle on the range become restless and seek shelter hours before there is any evidence of impending chance in rection that will impress the senses of man. The Chicago physiologist emphasizes also that people who suffer with rheumatism or any one of several other disorders that make the nerves particularly sensitive claim that they can tell of the approach of bad weather because of increased pain or that they "feel it in their bones." Perhaps weather and water are interrelated in more ways than have been suspected.—*Nebraska State Medical Journal.*

Serum Diagnosis by Complement-Fixation

With Special Reference to Syphilis, the Principles, Technique, and Clinical Application

By DR. JOHN A. KOLMER

(*Lea and Febiger, Philadelphia, Pa., 1928*)

This publication is a most valuable guide in the study of the complement-fixation test not only for the serologist and technician but also for the practicing physician and the veterinarian. In our opinion it is the most authoritative contribution which has thus far appeared in this field. Dr. Kolmer has presented the subject in his usual clear and precise manner, and has supplied it with invaluable practical observations and details which are so important in order to obtain the maximum of sensitiveness in the complement-fixation test. We believe that this volume is destined to serve as a standard for many years to come.

The book is very conveniently divided into four parts. In Part I, consisting of seven chapters, the author clearly defines all of the terms employed in serology, and also explains in detail all of the fundamental principles of serum hemolysis and complement-fixation. In addition to his own views, Dr. Kolmer has taken great pains to include the various hypotheses advanced by different scientists on such subjects as the nature of complement and specific hemolysins, the mechanism of serum hemolysis, specific complement-fixation, anticomplementary action, etc.

Part II contains a complete account of the method of conducting the complement-fixation test. There are separate chapters dealing with such elementary but vitally important points as the preparation of the glassware and saline solution, choice of a hemolytic system, method of obtaining and preserving the suspension of red corpuscles and also of the complement serum and hemolysins. In addition there is a detailed discussion of the significance of the various factors which influence the complement-fixation reaction, *e.g.*, the order of setting up, total volume, shaking, temperature, duration of primary incubation, reading scales, and methods of recording the reaction.

In Part III is included a thorough description of the equipment, reagents and technique of the Kolmer Complement-Fixation Test for syphilis, as well as for tuberculosis, gonorrhea, typhoid fever, glanders, contagious abortion, mycotic diseases, echinococcus, trypanosomiasis and other protozoal and metazoal diseases, as well as for the identification of sera, blood stains, meat and milk adulterations

and seminal stains. In addition there is described the technique of the methods for conducting complement-fixation tests with anticomplementary sera, spinal fluids, exudates and transudates.

Part IV contains a description of the methods of obtaining blood, chancre exudate and spinal fluid for complement-fixation tests. In the same section there are also discussions of the specificity, sensitiveness and practical value of the Kolmer Reaction in the various diseases and identification tests listed in Part III.

The author has also supplied a complete index and bibliography. He has apparently included every article dealing with the contents of his book which has appeared in the literature. The entire subject matter has been rendered so complete that any one interested in serology will find this latest contribution by Dr. Kolmer of invaluable assistance.—*Journal of Chemotherapy.*

The Hospital in Medical Education

The hospital as one of the vital elements of medical practice has long been recognized. In its more recent development, the hospital has become a medium for bringing about a greater spirit of cooperation among colleagues.

"The duties of a hospital staff," the *New England Journal of Medicine* reminds, "are primarily to give to each individual patient the best possible care. But, secondarily, they must give to house officers and to medical students, if any, and to their associates, all the benefits they can of their knowledge.

"The success of a hospital staff depends upon its ideals ,its coöperation and its ability to work for progress with the trustees and the public. Much depends upon the organization of the staff and the executive committtee of staff and trustees."—*Ohio State Medical Journal.*

Chronic Appendicitis

There is a growing appreciation that the operations that have been performed in the past for so-called chronic inflammation of the appendix do not in many cases relieve the symptoms for which the appendix was held culpable. This is shown particularly by the studies that have been made by surgeons from the results of a follow-up of patients who have been operated upon for many irregular and vague symptoms which have been thought due to a chronically diseased appendix. Carnett believes that many of these patients are suffering from intercostal neuralgia rather than inflammation of the appendix. It has been shown that 40 per cent of these patients are not improved by operation. Furthermore, such a well-known surgeon as Hugh Cabot has demonstrated that among 300 patients unsuccessfully operated on for chronic appendicitis, 11.6 per cent were made definitely worse as a result of the operation. Incidentally, the mortality rate of operations on the appendix has increased 31 per cent in the past two decades.

Surgeons have written most of the articles that have appeared in current medical literature and some few of the more enlightened ones have preached against the promiscuous removal of the appendix as a result of a diagnosis which is based upon a poke in the side and a history of indigestion. The medical man, as well as the surgeon, is now protesting against the wholesale removal of an organ which, while not in any sense vital or necessary to human economy, nevertheless is tucked away in a particularly sensitive portion of the anatomy. Bettmann writes that the diagnosis of chronic appendicitis is one made with considerable difficulty, and it takes close study and slow decision to arrive at such a conclusion. He calls particular attention to the fact that pathologists disagree as to what is really chronic appendicitis; that röntgenologists differ widely among themselves as to the röntgenologic diagnosis, one saying that a non-filling appendix is normal, another that it is a sign of disease, still others insisting upon tenderness as an important feature of the disease; and that surgeons are unwilling to study their patients thoroughly. He concludes that it is only after long and conscientious observation of the patient should he be submitted to surgical practices, procedures which might possibly cause death, which may never relieve the condition and which may ultimately make the patient worse than he was before the operation.—*New Orleans Medical and Surgical Journal.*

Pitocin and Pitressin

The epoch-making discovery and isolation of insulin, the active sugar-utilizing principle of the isles of Langerhans of the pancreas, by the scientists of McGill University created a world-wide stir the echoes of which are only now beginning to return, the ultimate value of the discovery having not even as yet been definitely determined.

At a recent meeting of the American Association for the Advancement of Science there was reported by Dr. Oliver Kamm, Director of Chemical Re-

search of Parke, Davis and Company, the isolation of two hormones from the posterior lobe of the pituitary gland, a discovery that is being held by many scientists to be of equal importance to the isolation of insulin and the discovery of adrenalin. For the work Dr. Kamm was awarded the $1,000 prize for the "most noteworthy contribution to science" presented at the annual meeting.

The two hormones isolated by Dr. Kamm from the pituitary gland are named alpha and beta (commercially, pitocin and pitressin, respectively), said to be the first time that any one has demonstrated that one gland might contain more than one hormone. The alpha hormone is the so-called oxytocic. The beta hormone is the blood-pressure-raising principle.

In addition to its pressor activity the beta hormone has the power of controlling the excessive output of water and as such presents many potentialities and clinical applications. Its action in controlling the water output is not upon the kidneys, as has been assumed to be the action with the former extract of the posterior lobe of the pituitary, but appears to be directly upon the individual tissues, assisting them in their utilization of water. Hence, its chief application and usefulness lie in diseases characterized by excessive loss of water, such as diabetes insipidus, burns, cholera, other infectious diseases and surgical shock.

How useful the clinical application of this new discovery may be remains for future intensive study. The suggestions of its application are interesting and its discovery is a step forward in the study of the endocrine glands. Speculation might be indulged in regarding the relation of these substances to the clinical cases of supposed pituitary gland involvement, the classification of which has always presented certain difficulties arising from inability to correlate the clinical type cases with known physiologic or anatomic changes in the gland.

The indiscriminate use of posterior lobe extracts in all "pituitary type" cases should be seriously questioned. If only two hormones exist and can be isolated from the posterior lobe of the pituitary gland it remains to be seen what part they play in the clinical cases. If, as Dr. Kamm suggests in his paper, certain individuals are sensitive to the action of the beta hormone—known as "physiological wets"—and these individuals are almost invariably of the fleshy type, then may it not be true that the adiposity, which has been attributed to deficiencies of the posterior lobe of the pituitary gland, be acually associated with an increased beta hormone content so that water retention is easily accomplished by the individual and so assists in the accumulation of adiposity? Conversely it may be possible to add weight to the thin, scrawny type of patient—the "physiological dry"—by the use of pitressin.

The discovery of these substances adds a new impetus to the study of the endocrine glands, opens up new fields and restores a modicum of faith to those who have doubted that the active principle of the endocrine glands would ever be isolated. Fortunately, perhaps, for the preservation of the scientific attitude in the study of their clinical application, the hormones have not yet been produced in large quantities, there being present only a very few grams of highly purified alpha and beta hormones available.—*Missouri Medical Journal.*

Pascarnata-Merrell

According to the catalogue of the Wm. S. Merrell Co., Pascarnata is prepared from fresh *Passiflora incarnata* (passion flower) and represents the medicinal virtues of the whole plant, but no statement of the amount of passion flower contained in a given quantity of this proprietary is given. Pascarnata has not been accepted for New and Non-official Remedies, nor is any passion-flower preparation included in the book. The following are some of the claims advanced for Pascarnata: "It serves as an ideal sporific [soporific?], without narcotic action, and is one of the most desirable antispasmodics and antineuralgics available." "In nervous or sick headache, sleeplessness of typhoid and other fevers, cerebral excitement, overworked mental faculties, brain-fag and the overstimulation due to worry and hysteria, Pascarnata will be found highly effective." "It is useful as a palliative in spasmodic bronchial asthma and whooping cough, and also in the hysteria due to dysmenorrhea." The following is the estimate of passion flower that is contained in the Epitome of the U. S. Pharmacopeia and National Formulary issued by the Council on Pharmacy and Chemistry: "Exploited by manufacturers of proprietary medicines for the treatment of insomnia, but probably inert." At one time passion flower was a constituent of many so-called female remedies and uterine tonics, but the drug was found to be without effect on the excised guinea-pig uterus.—*Journal A. M. A.*, December 15, 1928, p. 1914.

GENERAL NEWS

State Medicine

Within the past two or three years a number of magazines and periodicals have found a very profitable method of securing the reader's interest by analyzing the medical profession. In an attempt to be fair, many of these magazines publish an attack upon the profession in one issue and then follow with a dripping, sentimental succession of flattering phrases in the next. Health having assumed primary importance as one of the four or five fundamental activities of existence, it follows that those who maintain it—namely, the medical profession—must submit to being in the limelight with all of the penalties incident thereto.

Nevertheless, it requires a great deal of fortitude to sit quietly and read some of the articles contained in some of the modern periodicals. With a grandiose manner and eloquent air pressure, they tell the doctors what to do with themselves. There has been many a spinster editing a mother's and children's page in the magazine world who never underwent the pangs of motherhood. It must be true, because some of these wise medical analyses show little knowledge of what the facts really are.

We hold no brief for either "wets" or "drys," but we saw in an article where a mother in Michigan was sent up for life because of her fourth offense at bootlegging. Because of this incident many kind souls were outraged, especially when it was pointed out that the woman was the mother of ten children. As a matter of fact, seven of these ten children are dead and the other three are married. The incident serves to show what can become current, and it has been found that most instances brought up against the medical profession follow out very closely the percentage of error that was contained in the story of the Michigan mother.

Dr. G. W. Haigh was born in St. Louis, reared in Massachusetts, and educated at Harvard. He became a medical practitioner, served two years in a general hospital and two more years as a naval surgeon during the World War. His special interests are certain phases of sociological medicine and he keeps young through outdoor sports. Dr. Haigh has written for the February issue of the *North American Review* an article on "State Medicine; Boon or Bogy?"

The doctor is for it. He wants it done like the United States navy does it, and he hopes it will be carried out in a state or national way. He compares the whole business to the public school system, and says there is nothing more socialistic in offering medical treatment to every person *via* the state than in giving education to all the school children. If you believe this you will like Dr. Haigh's article. It seems the specialists are bound to grow and the general practitioner go into oblivion, and the sooner it is all done by groups under the state the better it will be. We knew the coal industry was overmanned, but it seems that the medical profession is worse off still.

We find that the present situation of medicine is chaotic and that doctors are in an unreasonable and incongruous position. We view with great alarm the fact that there is a plethora of haste and carelessness amongst us, and that some overworked practitioners devote but six minutes to looking them over. Those fellows who came back from the war and said they had all they wanted of the way medical service was handled in war-time were evidently shell-shocked, for Dr. Haigh concludes it is the only sensible way there is.

We have no way of telling how Dr. Haigh arrived at the conclusion that the general practitioner was in a deplorable state. He evidently was one himself, but he must have made it a "go" somewhere, else how could he indulge in outdoor sports? The moral is that most of us do not do enough swimming and skating. After a good plunge or a bracing turn on the ice is the time for thought and contemplation. Your mind is clear and it is then—and only then—that you see in what a fix individual medicine happens to be placed.

Canti Film Procured

The committee on scientific work of the state association, through Dr. Frank LeMoyne Hupp of Wheeling, has procured the Canti film cinematographic of living tissue and the effect of radium radiation on the cells for the state meeting at Martinsburg on May 22, 1929, it has just been announced. This film was exhibited in this country for the first time before the members of the Radiological Society of North America at the meeting in Chicago on the afternoon of December 5, 1928. The showing of the Canti film was one of the leading features of the International Cancer Conference at London and the International Radiological Congress at Stockholm, Sweden, last summer.

It is said to be a remarkable film, delineating by a moving picture the cell life and cell death. It is the property of the American Society for the Control of

Cancer, and through the courtesy of this organization, extended to Dr. Hupp, it will be presented at Martinsburg. Dr. Hupp is chairman of the West Virginia committee on cancer.

The Canti film will be presented on the evening of May 21 before the general scientific assembly. The speaker for this session will be Dr. Joseph Collins, of New York, author of "The Doctor Looks at Life," "The Doctor Looks at Marriage," etc. The orations, which were formerly presented at the evening session of the society, will be given at the general sessions this year.

More Quackery Squelched

Below will be found two stories. The first is an advertisement that appeared in a Wheeling newspaper on February 5, 1929, inserted by Dr. Robert A. Patterson, "the cancer specialist of Philadelphia." The second is a *bona fide* newspaper story concerning the activities of Dr. W. H. McLain, Ohio county health officer. The two items in themselves tell a much better story than could be worked out by the editorial board of this journal. They follow:

"Dr. Robert A. Patterson, the Cancer specialist of Philadelphia, will be at the Hotel McLure, Wednesday and Thursday, Feb. 6 and 7, to consult with any person afflicted with Cancer and to give a demonstration of his method of treatment, by means of photographs of actual cases.

"On Oct. 26, 1916, The Evening Telegraph, of Philadelphia, published a six-column article pertaining to Dr. Patterson's method of treating Cancer. Out of a large list of names of cured patients submitted to the Telegraph, twenty-six were selected for investigation.

"These people were interviewed by a representative of the Telegraph. Twenty-five reported that they had been permanently cured, many of them after other methods had failed, and one reported that he had been benefited.

"Dr. Patterson has offered his treatment for Cancer to the Rockefeller Institute for Cancer Research. He will be especially glad to demonstrate his method of treatment to physicians."

"Dr. W. H. McLain ordered Dr. Robert A. Patterson, Philadelphia, to cease practicing in this city without a state license or he would be arrested by health officials. This notice was issued to Dr. Patterson following the appearance of an advertisement in an evening paper of Tuesday, which carried a caption, 'Philadelphia Cancer Specialist Coming to Wheeling.'

"Dr. Patterson was located at the McLure Hotel Wednesday at noon by Deputy Sheriff John G. Hammer. Deputy Hammer brought the man to the county building, where Dr. McLain interviewed him about his cancer cure. Dr. Patterson stated he had a Pennsylvania license, but he could not produce it, while he also stated that he did not believe that he needed a West Virginia license. He denied any intent to violate the law in any way.

"All the personal effects that the doctor had, in a professional way, was a small satchel of tools. After receiving the warning from Dr. McLain, the Philadelphia specialist visited the office of the newspapers and ordered his advertisements 'killed.' There will be no charges placed against him."

Civil Service Examinations

The United States civil service commission announces open competitive examinations for a physician at $3,800 a year and an associate physician at $3,200 a year. Applications for the above-named positions must be on file with the civil service commission at Washington, D. C., not later than June 29, 1929.

The examinations are to fill vacancies in hospitals of the Veterans' Bureau for duty throughout the United States. The entrance salaries are as indicated above. Higher-salaried positions are filled through promotion. Competitors will not be required to report for examination, but will be rated on their education, training, and experience. On account of the needs of the service, papers will be rated as received and certification made as the needs of the service require.

Full information may be obtained from the United States Civil Service Commission, Washington, D. C., or from the secretary of the United States Civil Service Board of Examiners at the post office or customhouse in any city.

Pfunder's Stomach Tablets

Frederick H. Pfunder, Ph.G., of Minneapolis, sells a "patent medicine" that he calls "Pfunder's Stomach Tablets: A Remedy for Ulcers of the Stomach." The A. M. A. Chemical Laboratory analyzed the preparation. It reports that from the result of its analysis it may be calculated that Pfunder's Stomach Tablets contain as essential ingredients: bismuth subnitrate, U. S. P., 30.5 per cent; magnesium oxide, U. S. P., 22.8 per cent; sodium bicarbonate, U. S. P., 24.4 per cent.—*Journal A. M. A.*, December 1, 1928, p. 1736.

Endemic Typhus Fever

Recent work by officers of the United States Public Health Service, in connection with studies of endemic typhus fever in the United States, is of much interest.

The data which are available from morbidity reports, from the literature, and from field investigations, give only a bare outline of the occurrence of this typhus-like disease in the United States. So far as information is available, it seems to indicate that the disease is rather sharply limited to the Atlantic seaboard and the nearby Piedmont sections, going as far north as Boston. It is present in nearly all of the seaports from New York southward, and has attained widest distribution in Alabama, Georgia and Florida. On the Gulf coast, while it has been reported from Tampa, Pensacola, Mobile, Galveston, and Houston, there is at present no information regarding its occurrence in Mississippi or in Louisiana. The lower Rio Grande Valley from Laredo to Mercedes constitutes an important focus. On the Pacific coast only Los Angeles has reported a considerable number of cases. While an occasional case has been reported from the interior of the country, that section has been, for the most part, strikingly free.

This limited geographic distribution in the country at large is confirmed by the more intensive study of the disease in the state of Alabama during the past five years. In this state, as has been pointed out previously, the disease is endemic in the towns south and east of Montgomery, but not to the north and west, except for the few cases which have occurred in the Birmingham district. Considering Montgomery as a primary focus, if the disease were transmitted directly from person to person there is an approximately equal chance that during the past five years it would have spread along any of the six railroad lines or the many highways which enter that city. It would then have had a scattered occurrence and become established at random in the nearby cities and towns in all directions.

This has not occurred. The cases have been grouped almost entirely along the Atlantic Coast Line and its small branches running southeast from Montgomery to Savannah and Jacksonville, along the Louisville & Nashville railroad, running south and slightly west to Mobile, and a branch of this road running to Red Level, Andalusia, Opp, and into Florida. These cases have not been traceable to direct importation from Montgomery. Their origin is local. They may occur at considerable intervals of time, but there are one or two or more cases each year in these towns without traceable association with a previous case and without subsequent secondary or contact cases. The disease is dependent upon undetermined conditions which are present in these towns and absent from those farther north in the state. So far as the human host is concerned, racial composition, habits of life, sanitary, economic and social status, there are no significant differences apparent in comparing these towns in the southeastern part of the state with towns farther north. Body lice are almost unknown in Alabama; head lice are found occasionally in school children. The infestation with this parasite is generally below one per cent, and the towns of the southeastern section are not different from those in the north and west in this respect. The population is stable, and there is practically no immigration from Europe or from Mexico.

The limitation of this disease geographically does not seem to be explained satisfactorily on the basis of direct person-to-person transfer or through the intermediation of the louse. Some agency other than man and his own parasites would appear to be responsible for the preservation of the virus. This agency, be it insect alone or an insect which feeds upon some host other than man, must be correspondingly limited in its distribution, or at least its capacity for acting as a vector to man must be so limited.

Death Certificates

Certificates of death are important factors in the keeping of accurate vital statistics. The bureau of the census of the Department of Commerce at Washington has arranged standard methods of reporting and the states that conform to its requirements are grouped into what is known as the United States registration area.

The bureau sets forth the following reasons why reporting of death certificates is important, quoted in *Hygeia* by Dr. Thurman B. Rice:

1. Certificates of death or certified copies of them are constantly required in courts and elsewhere to establish necessary facts.

2. Pensions or life insurance may depend on proper evidence of the fact and cause of death.

3. Titles and rights to inheritance may be jeopardized by the failure of records.

4. Deaths should be registered that public health agencies may know the causes of death and act promptly to prevent epidemics.

5. Deaths should be registered promptly, that the success or failure of all measures attempted in the prevention of disease may be accurately determined.

6. Deaths should be registered that individual cities and localities may learn their health conditions by comparison with conditions in other communities and determine thereby the wise course of public health activity.

7. Deaths should be recorded that homeseekers and immigrants may be guided in the selection of safe and healthful places to live.

The Diabetes Paradox

There is probably no situation in the field of public health quite as puzzling as the present one regarding diabetes. For, despite the use of insulin, which, admittedly, has prolonged the lives of thousands of diabetics, the death rate from this disease is going up. Over a year ago the *Statistical Bulletin* referred to the increase in the death rate among Metropolitan Industrial policyholders during 1925 and 1926. Since that time, the mortality has continued high, the 1927 rate being as large as that for 1926; and from present indications the 1928 figure will surpass slightly that for 1927. This, at least, was the case up to December 15.

Among males, the diabetes death rate has gone down steadily for all groups up to age 45. At ages 45-54 and 55-64 no important change has occurred. It is only after age 65 that there has been a distinct and significant rise since the introduction of insulin.

Among females, on the other hand, the decline in the death rate has been limited to childhood and early adult life. At ages 35-44 and 45-54, there has been a slight rise. After age 55, the increase has been practically uncontrolled. Here the crux of the problem lies, for nearly one half of the total deaths from diabetes in the industrial experience of this company occurs among women over age 50.

The statistics are unmisakable in their clarity. And yet we have case records of doctors the country over indicating that the average duration of life of diabetics under insulin treatment has increased. The explanation of this incongruity probably involves several factors, and we shall attempt to outline only a few of them.

In the first place, as we have previously shown, a considerable number of diabetics either do not receive insulin treatment at all, or their treatment is begun too late. Three years ago we reported on 1,800 fatal cases among Metropolitan Industrial policyholders on whom were paid death claims. At that time we found that insulin was used in less than half the cases. Our analysis also showed that its use was more frequent in large urban areas than in the small cities and rural districts. Furthermore, much of the actual treatment was final emergency treatment; half of those given insulin received it for the first time within a month of death, and not less than 17 per cent within one day of death. Undoubtedly, treatment with insulin has increased since that time, but to what extent we do not know. A supplementary study of the same kind will be made of our fatal cases during 1929.

The fact is also lost sight of that the diabetic suffers from a chronic impairment which requires more constant care and treatment than most other chronic diseases; an impairment in which the patient, by carelessness or oversight, may come very near death's door any number of times. Furthermore, the idea that insulin *cures* diabetes is probably more prevalent than it ought to be. This is, of course, quite untrue. It is a treatment—not a cure—and all that it does is to supplement the deficient supply of a substance manufactured in the healthy body. Many patients under treatment, however, respond so favorably that there is engendered a false sense of security; they become careless in their diet, and are apt to stop the insulin, with the result that the hyperglycemia and glycosuria recur, ketoosis supervenes, and the patients die in coma.

The competent treatment of diabetes is expensive, necessitating a considerable expenditure for the preparation itself, and relatively high cost of medical supervision as compared with other diseases, because of the necessity of frequent visits to the doctor and frequent blood sugar and glycosuric examinations. Again, the insulin treatment is undoubtedly most efficacious when given by specialists whose charges are higher than those of the general practitioner. Doubtless one very important reason why the death rate has not diminished, under insulin, is that many general practitioners have not been taught, as yet, how to use insulin to the best advantage. Moreover, to administer it wisely, the doctor needs a thorough knowledge of dietetics and blood chemistry—in fact, needs these even more in treating diabetes with insulin than without it.

There are other underlying reasons for the increase in the death rate in addition to those factors which affect the relation of the diabetic to his doctor. By its very nature, insulin, not being a cure, would bring about merely a temporary decrease in the death rate. We should normally expect, with the

use of this drug, to find the death rate at the older ages creeping back to the old level and, in fact, increasing, because more and more of the younger diabetics would arrive at the older ages, only to swell the number of diabetes deaths. But even more important is the fact that the incidence of the disease itself is rapidly increasing, and especially among women. This definitely reflects the prosperity of the last few years. It has been shown again and again that the consumption of sugar and the richness of the diet determine the level of the death rate from diabetes. During the World War, when the consumption of lururies was cut down, the diabetes death rate declined. Since then, the incidence of death rate declined. Since then, the incidence of the disease has steadily mounted, reflecting the better times. This is especially true of women whose economic and social status, all over the world, has been immensely improved in recent years. Dr. Joslin, of Boston, whose opportunities for observation are the very best, reports that in his own practice the number of female patients has grown from one quarter to more than half his total; that is, the number has practically doubled in recent years.

It is our opinion, therefore, that while the rise in the diabetes death rate is real and serious, it is not at all inconsistent with an increasing and more effective use of insulin. Were it not for insulin, the death rate from diabetes would have been much higher than it is, in view of the clear fact that more and more cases of the disease are being produced. Prosperity carries with it the penalty of a high diabetic death rate. It is in this way that our paradox is resolved.—*Statistical Bulletin*, Metropolitan Life Insurance Company.

Undulant Fever

Undulant fever, a disease contracted from cattle and hogs which are infected with contagious abortion, is being more widely recognized as a problem of considerable importance from a public health viewpoint. A number of cases of this disease have been reported from various states.

The disease of contagious abortion is quite prevalent among cattle and hogs throughout the country. Persons who drink raw milk from infected cattle or who handle hogs or cattle that are infected are likely to contract the disease. The name, "undulant fever," is applied to the disease because the attacks of fever come in waves or undulations. The disease was first recognized on the island of Malta, in the Mediterranean, and it was thought for a time that it was spread only through the milk of goats. It is now known, however, that the disease may be contracted from cattle and hogs. The disease is not only disabling but extremely chronic in duration. The patient may be ill for two or three years before any improvement is noted.

Important studies made by Miss Alice C. Evans, a bacteriologist of the United States Public Health Service, have shown the relation between this condition in human beings and contagious abortion in cattle. In certain states it has been said that undulant fever is of greater importance from the viewpoint of public health than is typhoid fever. Many cases are contracted from infected milk. Fortunately, however, efficient pasteurization readily destroys any of the germs of this disease which may be present in milk. The chief precautions, therefore, are the use of pasteurized milk and care when coming in contact with animals known or suspected to be infected with contagious abortion. In a series of cases of undulant fever recently studied among adults living on a farm, there were 39 males and 6 females; six of the male cases are known to have derived their infection from hogs.

Talking Medical Films

Talking films which show, in actual colors, a surgeon performing an operation and reproduce his voice as he lectures on its technique, have achieved such success at the New York Post-Graduate Medical School and Hospital that an international demand for their use has been created, the hospital announced recently.

The films, which have recently been developed under the direction of two professors of the Post-Graduate Medical School and Hospital, will be exhibited soon before medical groups in Boston, Philadelphia, and Montreal, and also will be shown next summer to the International Clinic of Plastic Surgery in Paris, as well as before medical audiences in England, Belgium, and Holland. They recently were exhibited by Dr. J. Eastman Sheehan at the Pan-American Medical Congress in Havana.

"The film method of teaching, as demonstrated, is said to be more effective, in many instances, than the clinic and operating-room demonstrations hitherto used," states the hospital's announcement.

"Thus far, the films developed at the Post-Graduate Medical School have been used principally to demonstrate the technique of skin grafting, reconstructive surgery to restore use of various members of the body crippled by accident or disease,

especially crippled fingers, and the correction of nasal disfigurements.

"The ability to produce the actual colors on the screen, according to Dr. Sheehan, is determined by taking alternate images through two lenses, one of which receives the image through a filter in which red is tempered by yellow, the other in which the blue dominates, but also with an admixture of yellow, thus covering the spectrum as relates to the three primary colors.

"These images are projected through filters of the same values, again through two lenses, coördination of the filters on a revolving disk assuring from an ordinary reproduction a result that is measurably perfect."

Vision Quacks

Quacks and charlatans find a fertile field amoong people who need glasses or think they do, Dr. Harry S. Gradle observes in an article on "eye fakes" in *Hygeia* for December. It seems that a man who would not dream of investing in fake oil stock loses his power of reasoning completely when the precious faculty of sight is involved.

Instead of asking his family doctor to recommend an oculist who is qualified to treat him for diseases of the eye, he follows the advice of some well-meaning but mistaken friend who sends him to some person who has recommended himself highly in the daily press.

Doctor So-and-So guarantees to cure trouble with exercises or secret electrical apparatus or colored light or garlic between the toes or some other nonsensical procedure, Dr. Gradle declares. The charlatan uses big words and mystifying apparatus and the patient is gulled into believing he is being benefited.

A popular method at present is selling glasses by mail. The examination consists of two questions: "How old are you?" and "Have you ever worn glasses before?" A test of these glasses was made by the American Medical Association by having half a dozen persons answer the advertisement. The mail-order glasses were so far from correct that they were useless, and in several cases would have been positively harmful.

The State Program

This article is being written at the request of the committee on scientific work of the West Virginia State Medical Association, the members of which are faced once more with the problem of holding up the attendance on the last morning of the annual meeting. At Fairmont last year, and at White Sulphur Springs the year before, the last morning of the meeting was a complete "flop," because only a handful of members were in attendance.

The committee feels that the election of officers just before the scientific session on the last morning of the convention is largely responsible for the slump in attendance. This election, they feel, is the climax of the state meeting, and, once it is over, the bulk of the members in attendance at once leave for their homes. As a consequence, the speakers from out of the state who appear after the election are faced by a sparse scattering of the faithful few who remain "until the last dog is killed."

In an effort to combat this problem and to do away with the discourtesy apparent to program speakers on the last day, the committee expects to arrange a program for the last morning that will be such a distinct feature of the session that the members will feel compelled to remain. For this last morning session they have secured Dr. Deaver of Philadelphia and Dr. Haven Emerson of New York, and they expect to add one more speaker as illustrious as the two already named. In this way they hope to make the scientific program on the last morning the real climax of the meeting, instead of the election of officers.

Those Annual Dues

It will be gratifying to the secretaries of county societies throughout West Virginia to know that the 1929 dues are coming in to the office of the executive secretary much more rapidly than they have within the past five or six years. Membership dues for over one half of the entire membership of the Association have already been received, and there is every indication that the delinquent list, which will go into effect on April first, will be reduced to an absolute minimum. On this date in 1928, and also in 1927, scarcely one third of the membership had been reported to the state office.

All of the county secretaries should bear in mind that, on and after April first, all members whose dues have not been received by the executive secretary will be placed on the delinquent list, to remain there until their membership fee has been paid. When a member is placed on this list, his subscription to the WEST VIRGINIA MEDICAL JOURNAL automatically stops and all other privileges of the Association are denied. Any county secretary can save considerable misunderstanding in his society

by having his membership 100 per cent paid up before the date of delinquency starts.

Of course, the Association has no complaint to offer. The membership fees are coming in rapidly and an unusually large number of new members are appearing in the reports. The Association can only suggest that the good work be kept up so that the state society and all of its constituent organizations may continue to prosper.

Ambulance Chasers

The Panel is a monthly publication put out by the Association of Grand Jurors of New York county for the purpose of exchanging "views of public officials and citizens in the effort to prevent crime and secure the true administration of justice." A recent issue of this publication contained an article of particular interest to the medical profession, entitled "Barter and Sale of Patients and Clients," and the subject matter was based upon an "ambulance chasing" investigation sponsored by the citizens' committee. The article was written by Irving Ben Cooper, who states in part:

"Splitting or dividing fees between doctors is considered unethical, but we are not discussing or interested in it in this connection. It is when doctors employ runners or split fees with lawyers that we are concerned, and while section 274 of the New York penal law provides punishment for lawyers who employ runners, it does not cover doctors. However, the legislatures of many other states, including Kentucky, Iowa, Minnesota, Michigan, Ohio, Nebraska, South Dakota, and Tennessee, have enacted laws making it a misdemeanor punishable by fine or imprisonment, or both, or by revocation or suspension of license, for a physician to divide or agree to divide his fee with any person for bringing or referring a patient to him.

"But legislation alone will not cope with these illegal schemes and unethical practices. That it is unethical or illegal for a lawyer to employ 'runners' or to divide his fees has long been known to the profession. Nevertheless, lawyers have indulged in such practices despite specific statutes forbidding it. It required an investigation like the recent ambulance-chasing investigation to uncover, brand and punish those who indulged in such practices. As a result of that investigation, seventy-four lawyers were recommended for disbarment and a large number were referred to the office of the district attorney for criminal prosecution. However, that investigation was primarily an investigation of the illegal and unprofessional acts of lawyers. It incidentally brought to the surface and exposed many of the doctors and laymen implicated with the lawyers. Their participation was thoroughly gone into and many such cases were referred to the proper authorities, who are now considering them. By no means were all the doctors engaged in these nefarious practices examined in the recent investigation, as some doctors operated independently of lawyers. Thus the medical societies and authorities should not be content merely to prosecute those cases referred to them as a result of the bar investigation, but they should initiate searching investigation of all doctors participating in such questionable and illegal practices.

"An investigation into certain abuses and illegal and improper practices by members of the medical profession is in order, and this is not advocated as a result of what some refer to as 'investigation hysteria.' It is argued solely for the reason that, firstly, there is much to substantiate the contention that practices of an illegal and unethical nature are pursued by members of the medical profession; secondly, that the same fundamental conditions exist in the medical profession as were found in the bar, wherein illegal and unprofessional conduct went undetected and unpunished as long as a broad power of inquiry was not exercised; thirdly, because the ambulance chasing investigation was successful in cleansing the bar a similar inquiry would cleanse the medical profession.

"If such an investigation were launched by the county and state medical societies in this state and the results thereof submitted to the official state medical 'committee on grievances' for action, the prophecy is made that lasting benefits would accrue to the medical profession, our community would be rid of vicious practices, and the profession would regain the full confidence of the public."

Unethical Advertising

Fortunately, unethical advertising in West Virginia is not a problem as far as the printed matter of the West Virginia State Medical Association and its constituent organizations is concerned. The WEST VIRGINIA MEDICAL JOURNAL excludes all advertising of a questionable character, as do almost all of the other state medical journals. In Pennsylvania, however, unethical advertising is a problem, regardless of the fact that the *Pennsylvania Medical Journal* adheres strictly to the precedent followed by the *Journal of the American Medical Association.*

The trouble in Pennsylvania comes from the county societies there that are large enough to support independent publications of their own. These county publications, according to a recent editorial in the *Pennsylvania Medical Journal*, do carry advertising that is both questionable and fraudulent. "It seems like a paradox," the editorial sets forth, "that certain county medical society bulletins will accept unethical advertisements when the journal of their state medical society is maintaining the high standards of the council on pharmacy and chemistry of the American Medical Association."

It is to be hoped that Pennsylvania will soon be able to curb the disturbing practice of its component societies. If a solution is found, it is our suggestion that it be forwarded to the *New York Medical Journal*. In the meantime, the West Virginia State Medical Association can feel that there is some comfort in being rather small.

Robert E. Vickers, M.D.

Word has just been received in the office of the Association of the death of Dr. Robert Evan Vickers, of Huntington, who succumbed on February 27, following a prolonged illness. Dr. Vickers was 72 years of age at the time of his death.

Dr. Vickers was born in Kanawha county, West Virginia, in 1858, and was registered before the medical practice act went into effect. He was graduated from the Bellevue Hospital Medical College of New York City in 1888 and has been in active practice for more than 40 years. He was a member of the Cabell County Medical Society, having affiliated with that organization in 1919.

The Spinal Adjuster Again

Jones is a rising young business man, though that is not his real name. He represents a large and influential corporation. He has the respect and confidence of his superiors in the same. Incidentally, he draws a good salary and commissions.

His business takes him about the counry and into several states. He is a robust individual, and had had no severe illness since childhood. He had, however, in the last few years, an occasional digestive disturbance lasting two or three days, for which he took soda.

Jones, while in a well-known city, was seized with another digestive attack, this time worse than usual. He noted some indefinite, colicky pain in his abdomen. His old friend, soda, gave no relief. He then thought of a doctor.

He had observed nearby a very presentable corner residence bearing a rather elaborate sign, stating that "Dr. Twistum" (not correct cognomen) there maintained an office, so he applied for help.

On entering the office everything was as it should be. He was cordially received by a gracious attendant. The office was bright, clean, and well furnished; the doctor was well groomed, suave, and of pleasing personality. Jones set forth his complaint.

After a brief history and cursory examination, it was explained to him that he was the victim of a vertebra that in some manner had undergone a "sublimation" and was making undue pressure on a certain nerve. This impingement was preventing the free flow of nervous energy to his organs of digestion and was the underlying cause of all his digestive disturbances, both past and present.

He was assured that if this "subluxation" were "adjusted" his troubles would be at an end. Jones had an "adjustment," for which, with the examination, he parted company with five dollars.

The next morning, feeling no better, he had another; and in the evening, feeling still worse, a third—the last two at three dollars per. He spent a rather restless night, and the next morning he realized that he was really sick, being unable to leave his bed.

Through a bellboy he appealed to the hotel clerk, who immediately called the hotel physician. The hotel physician, without consulting Jones, called a surgeon, who informed him that he had an advanced case of appendicitis, and that he had lost forty-eight precious hours. The hotel physician called an ambulance and ordered Jones to the hospital. He also wired Jones' wife, who hastened to be with him. Before her arrival an operation had been performed. A ruptured appendix had been found, together with a local purulent peritonitis. Jones had a drain in his belly and was an extremely sick man.

Eventually, however, he began to show signs of improvement, but he wore some sort of drainage for two weeks. He spent another two weeks in the hospital, and when he was ready to come out he was told by the surgeon that he had barely escaped with his life, which Jones believes. He spent another month recuperating, and then went back to his business, which by this time was in need of his attention.

On taking stock of his situation, he found himself out of pocket $1,400 in cash, saying nothing of the time lost from business, what he had suffered, and the fact that his life had been in jeopardy.

Strange though it may seem, Jones holds a grudge against the great state in which he was a sojourner, because he feels that the state, by granting a license to this particular spinal "adjuster," had somehow been a party contributing to circumstances that almost cost him his life.

CLAUDE L. HOLLAND, M.D.

Suggestions from the Board of Examiners for Registered Nurses

By FRANK LEMOYNE HUPP, M.D.
Wheeling, W. Va.

In endeavoring to elevate the standards of nursing in West Virginia, the Board of Examiners does not wish to inflict a hardship on any school now operative, or any new school applying for admission to the accredited list.

Our sole object is to place our schools and their nurses in the front rank with other states and to place ourselves among the pathfinders or leaders, rather than mere followers.

We are not so much interested in the total hours of instruction (yet this must not be neglected) as we are interested in the qualifications of the full-time instructor which every school should have. What has been her preliminary training? Has she had post-graduate courses? Has she attended a teachers' college of nurses? Such are the questions of primary interest.

We are deeply concerned about the previous education of the pupil. We would emphasize the necessity of requiring more than the minimum one year of high school work. Our dream for years has been to require every applicant to have a high school diploma, and let us hope this dream may be realized. What an educational beacon light our state of West Virginia would be if we could broadcast such a message!

The Board would place emphasis on what is considered an adequate experience in the various services. The urgent need of clinical bedside teaching and a careful supervision of the practical work of the students we would especially stress.

While there has been steady improvement, as we review the existing conditions we are forced to admit that only a small proportion of the total number of schools connected with the various hospitals throughout the state are wholly deserving of the name, "school." This opinion is based on the character of the papers coming before the Board for correction, and from the personal visitations of our worthy and efficient secretary.

This we recognize as a serious matter, and (as expressed by the New York Board in this recently issued bulletin) may very properly account in some measure for the lack of increase in the number entering the schools for nurses during the past few years, in proportion to the increase of young women entering the colleges during the same years.

May I be pardoned for further quoting from the *Bulletin of Training Schools* of the University of the State of New York? It is a well-known fact that a student group, properly taught and supervised, provides the most satisfactory nursing service which a hospital can have.

The wards of every hospital present an infinite variety of diseases, in almost all their types, and are indispensable as a training field for nurses. Yet how infrequently are they used for this purpose! I would envisage in every accredited hospital a group of student nurses at the bedside of every interesting case, with the attending surgeon or physician or their instructress pointing out every important symptom, diagnostic sign or nursing problem; how much better this would be than only the didactic lectures every medical man knows to be true! Every hospital should demand this practice training and teaching for their student nurses, but today it is either omitted or only partially carried out.

The hospital for chronic disease, the hospital for convalescents, certain special hospitals, the very small general hospital, unable to offer experience suitable or adequate for the training of nurses, may either affiliate or offer affiliation, or offer valuable fields for the preparation of trained attendants, while certain special hospitals, such as obstetrical, communicable disease, nervous and mental institutions, purely surgical hospitals, may offer valuable experience in their specialty.

Generally speaking, the hospital which is unable to offer at least three of the required services should be approved for affiliation in these services and should not attempt or even request the Board to conduct a full registered school. Remember, please, the Board has a definite and vital obligation to these young women and to the public when deciding to accredit a school.

The young women who are desirous of preparing themselves for a profession which is of growing importance in its relation to all health and social problems and activities, and in encouraging them we, the Board, with your coöperation, want to protect them, and solicit and require the support and

endorsement of this organization and every teacher and physician in the state.

Our Board shares the opinion of the New York University, when we recognize the need of the hospital, to provide an adequate service for its patients; but the time has passed when a hospital can expect to have its entire nursing, and part of its maid service as well, performed by student nurses. The time has also passed when the hospital, for economic and other reasons, may retain students in certain departments long past the time when service there ceases to be of educational value to the student, and thus deprive her of needed experience in other departments.

This may sound a bit revolutionary, but the Board knows it is in the right, and will use every ounce of its strength to make these ideals effective.

In the care of the sick, which is the fundamental task, the exigencies of other hospital work must never overshadow or push aside the educational needs of the student.

One of the defects found in many schools is the admittance of pupils at almost any date during the year. This is demoralizing and harmful, uneconomical, and encourages teaching repetition. The Board would have our schools admit their students in groups, or twice a year—or, say, in the fall and in the spring.

Students should not be considered a part of the regular nursing staff until they have finished the four-month preliminary course. They, of course, should be assigned to medical and surgical wards for supervised practice of procedures, four hours daily, which have been taught in the classroom.

A word about hours of duty and vacations: I have always contended that after eight hours of continuous practical and classroom work the nurse's tired brain is unreceptive and in no fit condition to hear a lecture, take notes, or do any serious or responsible duty, and I have also contended that a pupil nurse should have a month's vacation each year. There are many arguments in favor of this altered régime, but time forbids but the mention of the important topics. I maintain there would be fewer physical wrecks among student nurses if this plan were adopted.

Schools must offer sufficient inducements through the bettering of opportunities to attract women of higher education to the nursing profession.

It is a specialized education, and until you can definitely tell these young women and their parents that they are not launching upon a new order of training that will wreck their physical wellbeing, you are going to block the pathway to the modern school for nursing.

In a recent report made by a committee for the study of nursing education, of which Dr. C. E. Winslow, professor of public health in Yale University, was chairman, the statement was made that "the career open to young women of high capacity in public health nursing or in hospital supervision and nursing education is one of the most attractive fields now open, in its promise of professional success and of rewarding public service; and every effort should be made to attract such women to this field."

I had hoped to discuss the use of the ward helper; the correlation of theory and practice; the ratio of nurses to patients; but time forbids.

I hope each of you have read or will read the book entitled "Nurses, Patients, and Pocketbooks," recently published under the direction of May Ayres Burgess. Every teacher of nurses should own a copy of this book and study it diligently.

Dr. William Darrach is the chairman of that committee on the grading of nursing schools, and I know him intimately. There is a wealth of information on the nursing situation in this book which should be known to every teacher for its economic factors, for its developments in nursing education, for the radical adjustments suggested—some of them startling—and for the deep and thoughtful considerations developed on every page.

Iodide and Health

The extensive use of iodine in the prophylaxis of goiter has focused attention on the possible physiologic consequences of prolonged administration of this element. Hanzlik and his co-workers have made observations on rats. To an otherwise adequate ration, sodium iodide was added in amounts that corresponded to 3.3 mg. daily per kilogram throughout the major part of the life of the rats. This dosage would correspond to about 0.23 gm. daily for an adult of 70 kg. It was found that the continued administration of iodide in small daily doses in foods over long periods caused moderate though variable increases in weight and growth of the body in the majority of animals. The same tendency was indicated in rats on a deficiency diet. In contrast to the results obtained with iodide were those with sulphocyanate, bromide, arsenic, thallium, and manganese. From these experiments there is no reason to believe that the prolonged use of iodide in

small doses under ordinary conditions is detrimental. Hanzlik warns, however, that this would not apply to the continued use of iodide in specific conditions of the thyroid, or to large doses of the drug.—*Journal A. M. A.*, December 1, 1928, p. 1720.

Holding On

In ten more days another session of the West Virginia legislature will be out of the way. The question will be asked: What has been accomplished by the West Virginia State Medical Association? If the accomplishments of the Association can be judged by the prevention of offensive legislation, then the present session has been highly successful.

The measure which brought out the greatest clamor of objection from the medical profession was Senate Bill 93, a bill to exclude from the medical practice act all persons who practiced the art of healing through faith and without the use of drugs. Had this measure passed, it would have opened the gates of West Virginia to the quacks and charlatans all over the United States. Fortunately, this bill was caught in the house of delegates, referred back to committee, and indefinitely postponed. It was not only the medical profession, but the newspaper profession as well, that entered the arena to fight Senate Bill 93. The profession in this state can feel truly grateful to the Wheeling *Intelligencer* and the Charleston *Gazette* for the splendid editorials that helped stay the hand of ignorance and superstition.

Two other legislative measures, one to limit the requirements for chiropractors and the other to allow three-year students to practice in rural communities, also met with opposition from the committee on legislation of the Association. The first bill did not leave the house of delegates. The second passed the house by a narrow margin of four votes and passed out of the picture in the senate. In getting these two measures out of the way, the committee on legislation placed the finishing touch upon a legislative session in which they met with success at every turn.

One or two bills sponsored by the association are now on the road toward passage. If luck and perseverance means very much, they will be enacted into law before the tenth day of March. But, whether the association gets anything or not, the concensus of opinion seems to be that the profession has come through with flying colors by holding on to what it already has.

Capital Visitors

Dr. Harry G. Steele, of Bluefield, secretary of the Mercer County Medical Society, spent the day in Charleston on February 28. During his visit, Dr. Steele called on Governor Howard M. Gore and later had lunch at the home of Dr. David Littlejohn, of the state health department. Dr. Steele spent the early afternoon at the headquarters of the West Virginia State Medical Association, of which organization he is one of the councillors.

Dr. Frank LeMoyne Hupp, of Wheeling, and Dr. James McClung, of Richwood, were also callers in the capital city on February 28.

WOMAN'S AUXILIARY

The State Meeting

Plans for the annual meeting of the Woman's Auxiliary of the West Virginia State Medical Association, which will be held at Martinsburg on May 21–23, 1929, have been practically completed, and one of the best gatherings in the history of the organization is expected. A large meeting room directly across the street from the Shenandoah Hotel, where headquarters will be established, has been procured for the auxiliary sessions.

Aside from the regular program, a number of interesting social functions are being arranged. Among these functions will be a bridge luncheon on the afternoon of May 22 at the Martinsburg country club and a sight-seeing tour of interesting historical spots on the afternoon of May 21.

No auxiliary has as yet been formed by the doctors' wives in the Eastern Panhandle, but it is hoped that an organization will be perfected there in the near future. The members of the Eastern Panhandle Medical Society, and their wives, plan to do everything they can to make the auxiliary convention a success.

Kanawha County

The regular monthly meeting of the Woman's Auxiliary to the Kanawha Medical Society was held at the home of Mrs. W. S. Shepherd, 1106 Virginia street, on the evening of February 19, with fifteen members present. Mrs. V. T. Churchman, Jr., presided. The paper of the evening was presented by Dr. Robert King Buford, of Charleston, on "The Goiter." This was a most interesting talk and was well received by the members present. Following the paper by Dr. Buford, a short business session was held before adjournment.

ANNUAL MORBIDITY REPORT, 1928

	Chickenpox	Diphtheria	German Measles	Hookworm Disease	Hydrophobia	Influenza	Measles	Meningitis	Poliomyelitis	Scarlet Fever	Smallpox	Trachoma	Tuberculosis All forms	Typhoid Fever	Whooping Cough
Barbour		7				91	26		10	10	2		1	14	3
Berkeley	26	47					430			157	2			33	3
Boone	49	25	1			259	68		1	102	36			45	10
Braxton	9	17		1		121			2	29	53	1	3	2	
Brooke	10	34	2			645	114		3	41	2		11	7	
Cabell	17	117				260	8	3	2	162	98			28	1
Calhoun									1	3	1			2	
Clay	6					150			2		11		1	4	
Doddridge		3				175	5			14	10		2	1	24
Fayette	74	16				293	19	1	4	64	100		5	36	5
Gilmer	4						10		11	5	11		3	10	
Grant						13	4		2	5			1	3	19
Greenbrier		11	11			336	4	2	1	12				6	
Hampshire	5	2				30	3		5	18			1	4	2
Hancock	6	16	5			40	1		1	23	6		3	5	1
Hardy	1	1	1				12							7	8
Harrison	688	32	8			630	223	9	14	115	87	5	29	20	64
Jackson	5	1				366	10			31	74				80
Jefferson	17	9				12	49			6			3	3	25
Kanawha	198	95				518	58		9	262	56		102	118	44
Lewis	7	4				8	13			7	8		5	1	1
Lincoln						5			1	7	1			2	1
Logan	32	31	5			787			4	113	65		3	34	3
McDowell	57	18				1,311	38			26			1	24	
Marion	40	39	1			2,536	460	2	12	76	52	1	36	35	28
Marshall	75	23	3			189	85		1	32	6		57	4	11
Mason						533				3	12		5	18	6
Mercer	62	57			4	1,001	270		2	89	23		9	37	11
Mineral	146	59	2			406	165		20	126	3		153	19	212
Mingo	69	41				128	10	4	2	49	39		6	9	3
Monongalia	40	48				2,948	25		15	65	88		13	33	1
Monroe	2	5				43	1	1	1	13	9		3	3	25
Morgan	2	2				19	12			6			12	2	
Nicholas	31	8				1,015	120		6	18	41			17	19
Ohio	262	15	4			46	241	1	6	49	1		127	12	13
Pendleton	1	5				2									
Pleasants	1	22					42	1		2					
Pocahontas	2	19	11			3	4	1	4	16	31	1	1	21	6
Preston	9	25		2			66	1	24	54	88		3	25	5
Putnam		1				10				2				1	
Raleigh	36	35				1,524	96		4	63	124		3	12	2
Randolph	22	5	4			180	31		3	35				2	9
Ritchie						9	42						1		
Roane		2					7		1	16	5		1	11	4
Summers	57	8				692	10			21	46		30	13	
Tucker	1	1				4	23	1	6	10				5	6
Tyler	15		15			70	124			3			5		10
Upshur		3					49	1						1	
Wayne	7	14				55	24	1		4	33			9	
Webster	1	12				101	1		2	4	5		9	6	3
Wetzel	10		6			166	79	1	7	29	24				57
Wirt							1							4	
Wood	72	13				814	298		1	97	96		6		3
Wyoming	36	5				124				11	1		6	4	28
TOTALS	2,210	953	79	3	4	18,668	3,381	30	190	2,105	1,350	8	661	711	756

The West Virginia Medical Journal

Directed and Edited by the Committee on Publication

[The Committee on Publication is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible]

JAMES R. BLOSS, *Editor-in-Chief* - - - - - - - - Huntington

ASSOCIATE EDITORS:

WALTER E. VEST, Huntington — HARRY M. HALL, Wheeling — J. HOWARD ANDERSON, Marytown — C. A. RAY, Charleston

MR. JOE W. SAVAGE, *Secretary-Business Manager*, Charleston

Entered as Second Class Matter, January 1, 1926, at the Postoffice at Charleston, West Virginia

Vol. XXV — APRIL, 1929 — No. 4

SOME COMMON PROBLEMS IN THE MANAGEMENT OF THE SICK INFANT *

By GEORGE EDWIN BAXTER, M.D.

Associate Attending Physician to the Children's Memorial Hospital

Chicago, Ill.

The problems confronting the physician in the management of the acutely sick infant are not new. Sickness and disease in infant life are the same as they were in the decades past. Our knowledge of the physiological and pathological processes has greatly increased. The infant is not merely a small adult; he is relatively immobile and helpless. He is entirely dependent upon some one to bring food to him and to assist him in taking it. His digestive processes are easily disturbed, either because the food is not adapted to him or the food which has been properly adapted can not be digested because of the change in his condition resulting from some infection. Metabolism in infancy is easily disturbed. Changes in water and salt balance occur often from infection or improper management. Dehydration develops easily and jeopardizes the infant's life.

The infant develops fever quickly when any disturbance occurs in his metabolism or from acute infections. His heat regulation is unstable. Acute infections are of common occurrence in infant life. It is the period of great susceptibility to most all infectious diseases and particularly those focusing somewhere in the upper respiratory tract. This fact should furnish the basis of teaching parents, nurses and caretakers the necessity of preventing contact with infants by those afflicted with any of the common colds or respiratory tract infections. These infections interfere not only with his immediate wellbeing but with growth, and growth is essential to infant life.

The nervous system, due to its undeveloped state, is sensitive to external irritants or impressions. It is unstable and poorly controlled, consequently an acute illness accompanied by fever always produces more or less restlessness, irritability, and, in some cases, convulsions.

Reactions.—The infant's reaction to an acute illness is different from that of an adult. Rapidly developing fever, seldom accompanied by a chill, and audible protests to existing conditions, characterize the sick infant. A correct interpretation of the infant cry is necessary in proper management. There is the cry from pain, from colic; discomfort from fever or from clothing; the cry of hunger, the cry protesting against methods of care and treatment in sickness, such as bathing, forced feeding, forcible insistence upon taking of medicines which are, to say the least, unpalatable; the cry from earache, which is of frequent occurrence and too often unrecognized. Physicians must learn the infant language. When it is once mastered and properly interpreted, the physician, treating infants, will be

* Address delivered before the Central Tri-State Medical Society at Huntington, West Virginia, September 20, 1928.

thankful that he is not obliged to gain all his information from the statements of an anxious mother, which are too often misleading and unreliable.

In all medical work, the correct management of the sick is based upon a diagnosis of the disease, or at least a thorough understanding of the patient's condition. Such knowledge can only be obtained by careful observation and a thorough physical examination when the infant is nude. The various laboratory methods for determining the physical state should be used, if necessary, but never neglect the clinical history and a careful examination. Most physicians' mistakes in diagnosis are made not because of a lack of knowledge but because they do not use that knowledge in assembling facts. Inspection is the greatest single instructive method of examination of the patient. Presence or absence of a toxic state, condition of skin, presence of eruptions, study and interpretation of chest and abdominal movements and of the body and extremity movements, of the position in bed, eye reactions, throat and mouth conditions, are a few of the facts observed with the eye. These and other ocular evidences, supplemented by careful palpation and auscultation, will, in a large majority of infant disturbances, be ample to make a diagnosis, leaving the laboratory to assist in the more obscure cases. Every sick baby is entitled to an exact or tentative diagnosis of his condition before subjecting him to any form of treatment. In making a diagnosis and for purposes of treatment we may group the acute maladies of infancy as follows:

1. Contagious or exanthemata—very rare.
2. Severe types of acute infections for which we have no specific cure, such as pneumonia and sequelæ, meningitis (non-epidemic forms), poliomyelitis (doubtful specific cure). Infections of the uro-genital tract (acute pyelitis) is of relatively common occurrence.
3. Common infections of nose, post-nasal space, ears, throat, tonsils, bronchitis.
4. Intestinal disorders resulting from food disturbances, parenternal infection or intestinal infections.

The first group is rare in infant life. The second group is relatively common. The third and fourth are extremely common. Excluding the comparatively few disease for which we have a specific treatment, serum or otherwise, it is easy to see that we must constantly bear in mind that we are treating an infant whose normal functions and habits are disturbed by sickness, and, whereas we may not be able to do much of anything for the cure of the particular disease, we can do much for the infant. Therefore, we approach the subject from the point of view of the management of the acutely sick infant, and not especially for the treatment of the disease or infection. This same method and point of view applies in a lesser degree to that class of infants suffering from a disease for which we have a specific remedy. In this group we must never lose sight of the infant itself. Experience and judgment must guide the doctor as to how and to what degree he is to administer the specific remedies. *Specific therapy, either medical or surgical, has claimed the enthusiasm of physicians to such a degree that he has neglected other important factors in the care of the sick infant and thereby undermined the art in medical practice.*

Dentition.—Dentition is not included in the four groups because it is not a cause of sickness in infancy.

There is an opinion, prevalent among some physicians, that many of the infant illnesses are the result of the physiological process of eruption of teeth. It is safe for every practitioner to assume that no acute illness of the infant is due to teething. If, however, after careful and repeated examinations of the sick infant, the doctor can not determine any other cause for the illness, and he finds positive evidence of infection in the gums where teeth are being erupted, he will be justified in attributing the illness to the process of teething. The longer you search, and the more carefully you search, for the cause of the illness, the fewer times you will be content in making the diagnosis of teething as the cause of the infant's illness.

Acute gingivitis or stomatitis in the older infant is commonly seen. This is a definite infection with the accompanying evidence of illness, but it never occurs until the teeth are through the gums. During the time of eruption of teeth we frequently have irritability, some loss of appetite, some restlessness, but practically never any other symptom. Fever, vomiting, and loose stools always have other causes. However satisfying it may be to parents or doctor to know the cause of a certain disturbance, it is more important to the infant to correct the existing condition. Loose stools have continued for days and even weeks uncared for because the mother has taken refuge behind the teeth. "I thought it was due to the teeth," so she considered the trouble as negligible and yet the infant has suffered a severe setback in his nutritional development, because the legend, "due to the teeth," furnished entire satisfaction to the mother.

The doctor must first be convinced that practically no pathology results from teething. That process is physiological. He must give up the habit of attributing various kinds of illnesses to the teething process; he must properly instruct the parents so they will not take it upon themselves to make a diagnosis of teething and thereby overlook some important or possibly serious condition. I am well aware of the difficulties ahead of such a propaganda and that fallacious teachings which have been going on for generations are not easily changed. They have become so grounded in tradition and the lay mind that it will be a work of many years to make such a correction.

The fact that the onset of most illnesses is the same, that certain symptoms prevail in many and various disorders, furnishes a guide in managing the infant and further proves why certain well-known methods of attack can be used with many if not all sick infants.

Cathartics and Constipation.—Constipation of itself does not produce fever in the infant; therefore, the constipated infant can not properly be described as a sick infant. We find babies that will be more or less constipated during their whole first year of life who thrive, gain properly in weight and have no illnesses. Constipation is believed by the mothers to be the cause of fever and the cause of convulsions. This same belief is entertained by some physicians. If one applies the same method of investigation in these babies that are constipated and are sick, which has been advised to be used in the babies who are assumed to be teething, the result will show that simple constipation furnishes no cause of sickness. Constipation is usually an incident, a mechanical inconvenience. It is quite proper that the bowel should be emptied of a large amount of fecal matter at the beginning of an acute illness. Whatever means may be used to produce this evacuation, one should be careful not to interpret the results of cathartics as evidences of acute intestinal disturbances. A drastic purge in an infant will produce mucus in the stool and a green color to the stool, because of the increased peristaltic action and not because there is an infection in the intestinal tract. Constipation never occurs in exclusively breast-fed babies. There may be no stool because of insufficient breast milk, but the stool is not to be defined as constipated.

Cathartics and purges should be used sparingly in the treatment of the sick infant. There is practically no indication for the use of calomel in the acute infant. The field of usefulness of castor oil has been so narrowed that most infants are helped to their normal condition without it. Many physicians persist, however, in the time-honored custom of administering the cathartic as the first prescription in infant illness. The poor intestinal tract must still bear the brunt of the physician's attack against illness. The more careful clinicians now recognize that those conditions of sickness formerly attributed to intestinal infection, upset stomach, etc., find their true cause, as a rule, in infections in the throat, nose, or post-nasal spaces. We have even had reports of diarrheas being cured by mastoid operations. It is a dangerous field to speculate in, but undoubtedly tends to further prove the common observation of the connection between upper respiratory-tract infections and loose stools.

Cathartics are not only not indicated in the acute infant but may, indeed, do actual harm. A mild laxative or enema will be sufficient to empty the lower bowel. When severe laxatives or purges are used, however, the infant may be greatly depleted; water loss menaces life.

I would make the plea for less cathartics. After an experience of not using them, the gratifying results will convince you that the infant will make quicker and safer recovery than when cathartics are used. In my personal experience, for many years I have practically discarded them, with most satisfactory results.

Colic.—Colic is the complaint offered in two thirds to three fourths of all infants during the first three months of life—a condition which is looked upon by the parents as a serious one for the infant. Colic always produces considerable discomfort and is evidenced by gas in the bowels. Green stools may occur, but they are normal in breast-fed babies. The period when colic is most often observed is during the first two or three months, which gives rise to the expression, "three months' colic." Considerable comfort is often had by the mother in entertaining the thought that at 12 o'clock midnight at the end of the third month the colic will magically disappear. Colic in the breast-fed baby is usually treated by proper care of the nursing mother; colic in the bottle-fed baby is helped by the use of casein or protein milk and reduced amount of sugars. The most important factor in the treatment is to thoroughly examine the baby in the mother's presence and then convince her that there is nothing serious about colic. Its greatest importance lies in the disturbance to the mother and not to the infant.

Diarrhea.—A discussion of the acute infant must include a brief mention of diarrheas in relation to infant management. Loose stools are normal in breast-fed babies and are not pertinent to his discussion. One may place all cases of diarrhea in bottle-fed infants in one of the four following groups:

First, diarrheas due to food disturbances or food intolerance. In this group we have those cases in which the loose stools are due to an inability to properly digest the food, evidenced by impaired appetite, occasional vomiting, and always one or more loose stools in each 24 hours. There is no fever and the infant is not sick; he is usually playful and in all respects his actions are normal except for the above-mentioned symptoms. A correction in diet, depending upon the character of the stools, is all that is necessary in the treatment; indeed, sometimes the mere dilution of the formula that he has is sufficient.

In the second group, we may place those diarrheas resulting from a parenternal infection. As our knowledge of infant disturbances has increased, we have learned that parenternal infections are responsible for a large number of the cases of diarrhea which were formerly assumed to be the result of food disturbances or bacterial infections in the intestinal tract. These babies are sick, with vomiting and fever, while loose stools occur secondarily. The focus of the infection is quite commonly found somewhere in the respiratory tract. The tendency is for the diarrhea to be very persistent and does not yield as easily as do those cases found in the first group. Food is not the cause, yet it is the essential factor in the management of these cases. This is based entirely upon the fact that when diarrhea is present, from whatever cause, there is a definite lowering of tolerance for foods; particularly is this true for sugars and fats. Protein and starches are much better tolerated. Many of these cases do better when fed some form of protein or acid milk. Others will do equally as well if fed a simple boiled skimmed milk.

The third group includes the cases that have been named acute alimentary intoxication. The textbook descriptions of cholera infantum seem to fit this group of cases better than any of the older descriptions. The dominant characteristic of these cases is severe and protracted vomiting and frequent loose, watery stools which rapidly deplete the infant and produce a state of intoxication with dehydration. The exact cause is not known, but that there is a marked disturbance in metabolism is known. On account of the loss of water, the treatment must be directed toward introducing water into the system in order to restore proper water balance. Various methods have been suggested and are used. The best and most practical of these is subcutaneous injection of normal salt solution; amounts can be supplied to the infant in this manner until such time as sufficient amount of water or proper fluid food can be given and retained by mouth. It is in this group particularly that protein milk is best tolerated and is almost a specific food.

The fourth group includes the acute dysentery often designated as ileo-colitis, bloody flux, etc. These cases are a definite clinical group characterized by vomiting (which is not persistent) and stools that are at first frequent and fecal in character and gradually show evidence of blood and mucus. The primary focus of infection is located somewhere in the intestinal tract. These cases may be treated with astringent remedies, such as bismuth preparations, and may also be given opium in some form to relieve the pain and lessen the frequency of stools. In making the diagnosis, be sure to exclude acute intussusception—such mistakes have been make on account of the blood and mucus in the stools. Dysentery serum is practical and advisable in some instances; feeding is most important. The presence of blood and mucus in the stool is not a contraindication for the use of food. Buttermilk, other forms of acid milk, and protein milk are usually used. Occasionally, cereal gruels are best tolerated.

Cathartics have no place in the management of the infant with diarrhea. The theory that there is something remaining in the intestinal tract which must be removed has long since been exploded. Feeding the infant which has loose stools calls for our most intelligent adaptation of food. Careful study of the individual cases must be done to determine, if possible, the cause which frequently furnishes a very reliable guide in the treatment.

Vomiting.—In the sick infant, vomiting is the first treament, self-administered. In a majority of infants acutely ill, one of the first signs observed is vomiting. The emptying of the stomach is nature's first revolt against abnormal conditions. It is a conservation measure. Food is not readily digested in the presence of fever or disturbed functions; therefore, the infant's first reaction is to protect itself against further burden to its system by ejecting food. Whereas the initial vomiting or possibly two

vomiting attacks are to be encouraged, a continuation of vomiting may become a serious menace to the infant. The loss of fluids and the shock incident to repeated vomiting is often a forerunner of the disturbance called acidosis. Vomiting may not necessarily be the cause, but it interferes with the means necessary to combat such a condition. Water in some form must be given to the vomiting infant, provided it has not an acute abdominal condition. Surgical abdomens are rare in infancy, but they do occur, especially the condition of intussusception. Careful examination must be made to exclude acute abdominal infection or any form of intestinal obstruction. It is certain, in repeated administrations of water, that some of it will be retained, and the more that is retained the less are the serious results following dehydration.

Clothing.—Most all infants are overclothed, and the infant with fever requires less clothing than the normal infant. It is wrong treatment for parents or physicians to attempt to sweat out a cold in an infant by having it overdressed. It is a common procedure, as soon as the infant develops a fever, for the parents to immediately wrap them up with more clothing. Many high temperatures in infants are lowered simply by the act of removing all of the clothing and allowing the dissipation of heat.

Overclothing is a common source of discomfort to the infant. He protests vigorously, and the more he protests the more clothing is added. Not only is there too much clothing, but improper clothing. The flannel band is a nuisance; it is a source of discomfort and serves no purpose after the navel is healed. Soiled and wet clothing will make an infant protest by vigorous crying. Remember, he is a dependent individual and his only method of expressing his discomfort is to cry; he can not move himself out of his position, he can not get away from the discomfort of clothes. His only hope lies in loud and continuous protests and that some one will, sooner or later, understand what he is trying to say. How many times does one observe, in health as well as in sickness, the joy of the infant when his clothes are taken off and his cry as the clothes are put on!

Baths.—Bathing an infant with fever is nearly always good practice. Always a tepid or warm-water bath, and many times a tub bath, depending upon conditions of the infant and the intelligence of those in charge, should be given. Certain classes of people have a prejudice against giving a bath to an infant with an ordinary cold or fever, believing that bathing will make them worse. A contraindication to bathing is to be found in a weak or premature infant with or without fever. Great care must be exercised not to administer baths too often, thus causing genuine fatigue of the infant, which may be seriously ill. Nurses are often too energetic in the effort to get the temperature down.

Rest.—In all cases of acute illness in older children and adults, the universal practice is to put the patient to bed. The purpose of the enforced rest is to allow nature's forces to be used in the fight against the invading organisms. The infant, by force of circumstances, is bedridden; but other facors which make for rest are often neglected, such as making him comfortable, keeping him in a quiet environment, prevention of unnecessary handling, and attempts to quiet the baby by various members of the family or neighbors, and thus may avoid many nervous irritants which, though administered with good intentions, keep the infant in constantly disturbed state, prevention of unnecessary bathing, prevention of overzealous and too energetic treatment by nurses. Do not allow adoring parents to try to make him show off his tricks when sick or well. Finally, after the physician has examined him sufficiently to establish a diagnosis, avoid subsequent examinations except when it becomes necessary to inquire further into the infant's progress. The doctor's eraminations may fatigue the infant, so do what is necessary to locate the trouble and keep in touch with the progress, but make as few examinations as possible. Resistance by the infant to various kinds of treatment, either mechanical or administration of food or medicine, may cause him to expend far more energy in his fight against these than can be compensated for in the treatment administered.

Medicines.—It is not possible to discuss the use of medicines in detail in the management of sick infants. Most infants, when cared for in the manner which we have described, require little or no medicine. There are some instances in which an antipyretic may be indicated if the infant is having a high fever which does not respond to the ordinary hydrotherapeutic measures and particularly if that infant is having convulsions. Many of the ordinary illnesses in the infant require the use of no medicine whatsoever. Alkalies perhaps find a greater field of usefulness than any other group of drugs. There is a very decided tendency for the so-called acidosis to develop in babies that run high temperatures, which seems somewhat counteracted by the use of alkalies. All other medicines must have very specific and defi-

nite indications for their use. Since we have learned more of infant illnesses and more of drug usage, we find that there is less reason for the use of drugs.

Feeding.—Feeding is the most important task in the management of the sick infant. The first reaction of the infant to sickness is the loss of appetite. There may be complete refusal of food at first, but a marked impairment of the appetite usually continues throughout his entire illness. Parents become alarmed because he will not eat. The refusal of food in acute illness is one method of self-protection. Food should not be offered for a period of 12 to 24 hours, depending, of course, upon conditions and upon how ill the infant is. Ordinarily, when food is resumed, it is best to use the carbohydrate rather than the protein foods. There are exceptions, especially in certain forms of diarrhea. In the acute upper respiratory tract infections, the infant has a better appetite for carbohydrates such as sugar and cereal gruels, and tolerates them well. If the infant is old enough, thoroughly toasted bread crumbs or cracker crumbs and fruit juices, especially orange juice and fruit jellies, are most palatable to him. This type of food has a greater appeal to the infant than does milk. If the infant is not old enough to have foods other than liquids, recourse should be had to cereal gruels. If milk must be used, it should be free from cream and diluted with water or gruel. Some infants prefer acid or sour milk, which are often better tolerated than sweet milk. Many will refuse milk entirely. The indication for increasing the diet during or following an illness is to be found in the improvement of the infant's appetite. As soon as he feels better, there is a return of his appetite and an eager desire for food. Some infants, for example, which may have had a poor appetite previously, will often have a better appetite following the illness.

Feeding must necessarily be adapted to each individual infant. Do not insist that he be put upon an exclusive milk diet if he continually shows, by refusing milk and vomiting it, that he can not tolerate it.

Babies that are fed breast milk at the time of the onset of the acute illness may be deprived of that milk for a very short time only—six or twelve hours—but should always be returned to the breast. Removal of an infant from the breast is for the purpose of omitting food temporarily, not because the breast milk is harmful. It is almost inconceivable that breast milk could be the cause of a rise of fever in the infant; such explanations have been made and the infant unnecessarily deprived of the breast milk—one of its very best medicines during the acute illness.

Water is the most important food for the sick infant. All infants who have fever lose varying amounts of water. The one in charge of the infant or the physician should not fail to recognize signs on the part of the infant which indicate his desire for or the need of water. There is practically no acute illness in infancy where he should be deprived of water unless, perhaps, in an acute intestinal obstruction or an acute peritoneal infection. In those two conditions one may find it necessary to limit the quantity of water by mouth; in almost all other infections, water is indicated and must be given in large quantities. You should order for the infant, as a minimum, an amount equal at least to the total fluid intake which that infant was accustomed to having before his illness. Water may be given in the form of plain water or flavored with weak tea, with sugar, with lemon or orange juice, and, in some instances, with cereal. It is necessary that instructions should be definite as to the quality of water and the frequency with which it should be administered. Never be content with a statement to give "lots of water." The parent's interpretation of lots of water and the physician's may be entirely different. Practically all infants can be made to take water in the amounts prescribed, administering it by bottle, spoon, or medicine dropper. The mother or nurse must be persistent in her efforts and not be content with the statement, "He refuses water." It is certain that many babies have been saved from serious illness or serious consequences of illness when the parents have understood the importance of giving water and the quantities which they should give. Dehydration has serious possibilities. It can be avoided when proper attention is given to the watering of the infant.

In the management of all sick infants, success will not be attained until the physician has learned to give full and detailed instructions to those who are to care for the infant. More and more one is impressed with the necessity for giving directions that are explicit and easily understood. This fact can not be overemphasized. It is wise for the physician to form the habit of writing all his directions for the care of the infant. Remember, you are dealing with an anxious mother; her powers of concentration are not great during the time of anxiety, and she may easily forget or fail to receive an instruction which you know to be important. Make

your instructions clear in detail and express them in simple, non-technical language.

Finally, in the management of either the well or sick infant, an important fact to remember is that the infant is an individual. It is necessary to bring to bear all resources of the knowledge of foods, the science of feeding, and the reaction of infants to foods during health and illness. Then, judgment must be exercised in adapting a food or treatment to the infant in hand, and do not attempt to adapt the infant to a particular food or treament. During sickness the physician must remember that diet plays a most important part, that water is medicine, and that catharics have a small place in treatment. Bathing must be done with care and provisions made for rest. If breast-milk is being fed, it should be continued during the acute illness unless it is definitely proven not to be tolerated. Each baby presents its own particular problem in feeding and care, and success is assured to the degree that you exercise the art as well as the science of feeding and management.

SOME NEWER ASPECTS OF RICKETS *

By T. M. BARBER, M.D.
Charleston, W. Va.

In an endeavor to present rickets up to date, it will be impossible for me to cover such a vast field satisfactorily. The amount of work done in recent years and now being carried out by some of the very best clinical and research men in the world is simply stupendous. This gives some idea of the importance of the subject and the fact that the etiology is still unsolved hints at the difficulties met on all sides of such a many-sided problem. This problem of rickets, its nature, its prevention, and its cure, is a most interesting and vital matter. It concerns itself intimately with the general practitioner, whose lot it is to guide the infant in the early years of rapid growth. The first three years are the period when rickets develops, and is the time of times to really practice preventative medicine and see satisfying results.

I propose to state a few facts about rickets well known to you, some of the recent data brought to light in the research field, and to sum up the various lines of therapy now in use. It is easier to say what rickets is not than to give a definition. For instance, it is not entirely a deficiency of calcium or of phosphorus, although these deficits are associated; and it is not a dietary deficiency pure and simple, for replacing these chemical substances and correcting the diet may mitigate the condition but will not cure it. Hess calls it a disorder characterized by specific changes in the preparatory cartilage and growing bone. Such a general statement is serviceable until we know all about the subject, as we may do in the not too distant future.

Rickets appears to be closely connected with the rate of growth, for it develops in the first year and is made manifest at those points of fastest growth in the body. For instance, the head and chest increase 20% in size in the first four months, and rickets is seen at this time as cranial tabes (parchment-like parietals), and altering of a normally round chest into triangular, square and flat types, and beading. These usually begin in the early part of the first year. The so-called early signs of rickets used to be costal beading, enlarged epiphyses, prominent cranial bosses, flaring ribs, and craniotabes. These would appear toward the end of the first year or, more commonly, at some time in the second year. Now, we know that when these signs are obvious the disorder is well advanced, and that it has been progressive for some time. Since 1920 the x-ray has come to be a most valuable aid in early diagnosis, as also has blood chemistry, both showing definite signs of rickets before any clinical signs are manifest. By x-ray you find a lack of normal calcification with very slight cupping of the distal end of the long bone, and the end of the shaft widened with sharp instead of rounded corners. The line of demarcation between the cartilage and the shaft is not clearly defined. In a blood study, especially from the twelfth to the twentieth week, both calcium and phosphorus are found to be low, and such a finding is probably a better index of the activity of the process than x-ray diagnosis. Both the x-ray and blood signs may be found before any of the clinical signs are present.

The preventative and curative value of sunlight in rickets has long been known without an explanation of just what it does to the organism. At the present time the study of substances irradiated with ultra-violet rays holds the limelight, and the startling results obtained have aroused such enthusiasm that various authorities in the profession are sounding warnings that we do not know just what we are doing in urging irradiated foods and substances as a panacea. With all the difficulty we usually have in securing adequate sun, fresh air, diet, and cod-liver oil, it is hard not to get overenthusiastic when one

* Read before the Central West Virginia Medical Society at Gassaway, West Virginia, on January 16, 1929.

finds that by feeding a rachitic child irradiated dry cow's milk, or some other substance, it will become entirely well in three to four weeks, and that the blood and bone changes will be he same as that brought about by cod-liver oil, sunlight, or ultra-violet ray.

At present, irradiated cholesterol, ergosterol, and other sterols are being used as a cure for rickets. Hess first wrote extensively on the use of treated cholesterol. This substance, cholesterol, is present to some extent in nearly every animal cell, especially in the brain and epidermis, which helps explain the value of sun rays on the skin. Various workers, in testing the effects of different sterols, finally used ergosterol as the most satisfactory agent to be activated. This substance was formerly isolated from mushrooms, yeast, and ergot. After being activated by ultra-violet-ray exposure, it is 20,000 times as powerful an anti-rachitic as cod-liver oil; but it has been found that these substances can be overradiated, which causes them to lose their potency. Just how long to radiate the sterols, the dried foods, and other substances is becoming better known; just how long they hold their potency is not known, and until methods become more standardized in their manufacture one can not gauge his treatment effectively and safely. Work is being done at one of the larger universities in an endeavor to determine the deleterious effect of overdosing rats with irradiated substances. It is thought that the heart and other organs perhaps may undergo degeneration or sustain other damage from overdosing; at any rate, it behooves us to proceed cautiously with this new remedy. That it is a remarkable advance in prevention and cure seems more than likely. Some workers have tried to identify activated ergosterol with vitamine D, without actual success. The exact nature of vitamine D is still unknown.

The other remedies of known value I am sure you are more or less familiar with, especially hygiene, environment, sunshine, and cod-liver oil. First, every child, whether breast-fed or bottle-fed, should be regarded as a possible rachitic. There is no danger attached to the giving of cod-liver oil, nor is there any good reason for giving it only in the winter. Every child should have cod-liver oil from the first month on through the second year, at least, just as every child at one year or earlier should have the protection afforded by toxin-antitoxin against diphtheria. The dose is not fixed—a teaspoonful a day usually suffices; a little less in the early months and more as the child grows older. Some cases have been noted where the average dose did not protect and required several times the amount given. When you are told a child will not take the oil, it is the parents' fault, for any child can be made to take it. The earlier the age it is given the easier it will be. Practically all brands put out by reliable firms are of standard potency. Only one tablet, oscodol, is approved.

Sunlight should be explained to the parents; it should be started, when the weather permits, at about three weeks of age, and continued daily thereafter. First expose the hands and face 10 to 15 minutes a day, increasing the length of exposure two or three minutes a day. As tan forms, expose the legs and arms; later, the whole body, until a limit of one hour's exposure twice a day is reached. Remember that dust, clouds, smoke, and moisture cut off the short ultra-violet rays, and that sun exposure can not be accurately judged for these reasons. Ordinary daylight has some anti-rachitic value; about half to two thirds that of the sun. The attempt to use special glass, permeable to the ultra-violet ray of the sun, is successful but expensive and is hardly practicable for the average person. The Council-approved brands are Corning glass, clear Vita glass, and Celo glass. Sun rays must shine through these direct, not at an angle, to be effective.

Mercury vapor quartz lamp, when available, is an excellent preventative and curative agent, and the dose can be accurately judged. Owners of such lamps too often make the price of the treatments prohibitive to the average citizen. Exposure should be over the whole body, front and back, at an 18-inch distance, for two minutes three times a week, gradually increasing the length of exposure to ten or fifteen minutes. This lamp does all that sunlight can accomplish, and is to be preferred to carbon-arc and other lamps for this purpose. Its use is attended with danger, as pigmented moles and other irritative lesions may occur.

One food substance of value is egg-yolk. It is both preventative and curative, though in less degree than is cod-liver oil. Hess advises adding the yolk of a raw egg to the formula of a three-months child, to be added after the other ingredients are mixed. This may be used when cod-liver oil is not available.

Karelitz, of New York, in a recent article on the use of ergosterol, gives the preventative dose as 1 to 3 mg. daily, and the therapeutic dose as 2 to 5 mg. daily, and says that, in as much as ergosterol is stored in the body, the administration should be stopped

after three to six weeks, regardless of the stage of rickets at that time. This shows that he, like the others who are working in this field, realizes there is a danger in overtreatment. I advise any one wishing to try ergosterol to follow his outline of treatment. The irradiated foods, dry milk, cholesterol and ergosterol, are of undoubted value; but until their potency and dangers are fully worked out, I feel we are being more intelligent to apply the other methods—apply them early and long. It is nice to realize, too, that in preventing rickets we are also preventing tetany and spasmophilia—disorders that are commonly associated with it.

OBSTETRICAL EMERGENCIES *

By EDWARD SPEIDEL, M.D., F.A.C.S.
Louisville, Ky.

When an obstetrical emergency is treated in a maternity hospital it is surrounded with all of the safeguards and paraphernalia of a major operation, sterile dressings and instruments, two or more nurses, an interne and an anesthetist to assist the attending obstetrician.

How, then, can one expect the doctor alone in a home out in the country to conduct such an emergency?

There is only one answer to that question, and that is, "An obstetrical emergency is never a one-man job." Even in the country, no obstetrical emergency can or should be conducted alone. With two lives at stake, it is easily on a par with a major surgical operation, and no one would have the temerity to undertake such a procedure single-handed. In all instances, with practically all physicians supplied with automobiles, it should be possible to call another doctor to assist in such a difficult delivery. Even if there is a delay of one or two hours before he arrives, that time can be spent very profitably in getting everything ready for the delivery, sterilizing all necessary instruments, having an abundance of hot and cold sterile water ready, and preparation for the resuscitation of an asphyxiated infant. Even if the emergency is a desperate one, more will be accomplished by a careful planning of the method to be pursued than by haphazard immediate action. Practically all emergencies in obstetrics require surgical anesthesia, and the assisting physician, in addition to his counsel and advice, may be depended upon to attend to that feature of the situation at least.

When such a procedure is conducted in the home, hospital conditions should be as closely imitated as possible. No attempt should be made to conduct these procedures upon a sagging bed. The patient should always be transported to the kitchen with linoleum floor covering, which, with the ordinary short kitchen table, the sink, and hot and cold water easily accessible, makes an almost ideal obstetrical operating room. The short kitchen table is ideal for obstetrical procedures because it just about accommodates the head and trunk of the ordinary person, bringing the buttocks to the lower end of the table. The table should be padded with a double blanket, a square of oilcloth hanging over the lower end, and a clean sheet over all. The absence of stirrups is an advantage, as it is better to have the legs of the patient held by members of the family so that they can be raised or lowered to meet the conditions that arise in the delivery.

It does not take a very extensive equipment to conduct the obstetrical emergencies that can be taken care of in private homes, and it is the duty of every one practicing such obstetrics to be properly equipped and to carry that equipment constantly with him. The rear compartment of any automobile will easily contain the paraphernalia necessary for such emergencies, and the physician will feel greatly relieved to know that he has easy access to everything that might be needed. The most essential part of that equipment is a sterilizer large enough to contain the obstetrical forceps, for it is difficult in the ordinary household to find a kitchen utensil that is proper for that purpose. Rubber gloves can be bought for $3.50 a dozen pairs, so there is but little excuse if the doctor is short of them in his equipment. Gauze should be carried in one-yard sterile packages. Such a strip, cut down the middle to within four inches of the lower end, makes a two-yard length and is just the proper width for full-term uterine packing. Cotton should be carried in one-ounce sealed packages. The proper preparation of the patient is the next consideration. There is little reason in supposing that difficult obstetrical procedures can be carried out safely in the home unless the same precautions are taken that are customary in obstetrical hospitals. What is gained if you deliver such a woman safely, only to have her die later on from some complication due to the neglect of these ordinary precautions? Fortunately, the safety razor has made that procedure safe and

---

* Read before the Central Tri-State Medical Society at Huntington, West Virginia.

simple, and there should no longer be any discussion as to whether clipping or shaving should be done preparatory to the extensive vaginal manipulations necessary in obstetrical operations. Thorough soap-and-water cleansing should then follow this preliminary preparation.

An accurate knowledge and diagnosis of the existing situation is essential to the solution of every obstetrical emergency. The position and presentation of the fœtus should be determined by abdominal palpation and auscultation.

A pelvimeter should be in every physician's equipment, and with the knowledge that the interspinous measurement is about 26 cm., the intercristal 29, the bitrochanteric 32, the external conjugate 20, and that if he can not touch the promontory of the sacrum with two fingers pushed up into vagina, any abnormality of the pelvis may be eliminated. If he finds, besides, that if the knuckles of a small closed fist can be pushed between the tuberosities of the ischium, then he knows in addition that the outlet of the pelvis is roomy enough for delivery.

Obstetricians no longer depend upon the sutures and fontanelles to make a diagnosis of presentation and position. The location of the back and fœtal parts as determined by abdominal palpation gives more accurate information.

The auscultation and location of the fœtal heart then helps in confirming the diagnosis. It is only necessary to listen in four areas to locate the fœtal heart in all head presentations. In a line from the umbilicus to the anterior superior spine of the ischium on the right and left side and in the right and left flank behind that line. If the physician does not make his diagnosis to his satisfaction at the first examination, then the fact that he should listen to the fœtal heart every hour, at least during long labor, will give him abundant opportunities to improve his knowledge in succeeding examinations. With the knowledge gained from these investigations, proper corrective measures can be applied if there seems to be an obstacle to delivery.

In the great majority of obstetrical emergencies, forceps and version are the two procedures that must be relied upon, and it is well, therefore, to thoroughly appreciate their limitations and their indications.

In the discussion of home obstetrics it is useless to mention high forceps operations. When the head does not descend to mid-pelvis, then it is generally the indication of a serious disproportion either on the part of the mother's pelvis or the head of the fœtus, and in consequence even expert obstetricians in well-equipped maternity hospitals no longer attempt high forceps operations. This limits the procedure to mid and low forceps with the head either on a level with the spines of the ischium or on the floor of the pelvis. In the mid-pelvis operation the long diameter of the head must be in one of the oblique diameters of the pelvis, and traction must at first be downward and backward in that diameter and then, as rotation occurs, forward and upward. Previous catheterization of the bladder and an ironing out of the perineum should precede each forceps extraction. Accurate diagnosis of the position is necessary. Even if the fontanelles and sutures can be palpated, it is best to double-check that with the posterior ear. Naturally, if a posterior position is encountered, manual or forceps rotation must precede the traction. If the head is in transverse, then manual rotation into one of the oblique diameters is the proper procedure. In the low operation, the long diameter of the head is generally in the antero-posterior diameter of the outlet, but it is best to confirm this by the sagittal suture or by the position of the ear if a caput succedaneum covers the top of the head. A serious laceration can be avoided if the narrowest diameter of the head is thus drawn through the outlet. It is well, also, to exchange the long forceps for a pair of thin-bladed, short forceps when the head crowns the vulva, for the final extraction.

Two very important points should be borne in mind when doing a version. The patient should be under deep surgical anesthesia and the cervix should not only be fully dilated but retracted. With surgical anesthesia there is little or no danger of rupture of the uterus, even if the bag of waters has ruptured a long time before the operation. If the cervix is not fully dilated, then the shoulders or after-coming head will be caught by the contracting cervix and the delay in extraction will be sufficient to endanger the life of the child. If the version must be performed without full dilatation of the cervix, as is sometimes the case in transverse presentation and placenta prævia, then the delivery of the fœtus, after a leg has been brought out of the vulva, must be left entirely to the expulsive efforts of nature.

Although every doctor is supposed to be able to take care of maternity cases, it should be conceded that the one with small hands is especially endowed by nature to do a version, and when that important procedure becomes necessary the doctor with the

big fist should yield to his more effeminate colleague.

Elbow-length rubber gloves and an abundance of liquid green soap are additional valuable aids in doing a version.

Occipito posterior cases will probably cause more worry and anxiety than any other presentation. Most important with this condition is to know that you have a posterior position, to realize that it will take twice as long for delivery as an anterior, and then to act accordingly.

It is well to remember that a left occipito anterior in a pelvis with proper measurements is sure to show rapid and distinct progress under a number of hours of good, steady labor pains, and in the absence of such progress investigation will usually show an error in diagnosis and that a posterior position is the cause of the delay.

Too early alleviation of pain is often the cause of trouble in this condition. Contractions must be well established and must have continued for a number of hours before a hypodermic of morphine is given to secure much-needed rest and a continuance of the labor under the analgesia. In many instances the head will be found on the perineum and rotated when the effect of the morphine has worn off. If not, then a persistent occipito posterior confronts one, and, with a colleague anesthetizing the patient and the full-gloved hand inserted into the vagina, the diagnosis is confirmed by feeling the posterior ear, or, if necessary, going still higher and noticing that the face is pointing forward, then either a manual rotation or a forceps rotation should result in an easy delivery.

If the very unusual face presentation is encountered, then, be it chin anterior or posterior, the safest procedure after full dilatation should be a carefully performed version. In these cases a great deal of delay must be expected in the first stage of labor.

A breech presentation is readily diagnosed when the nurse tells you that meconium is escaping from the vulva of the mother. In other words, we have all slipped up on that presentation. There, again, a very slow first stage should be expected. If there is lack of progress after full dilatation and good pains, then a frank breech with legs extended should be expected and, under surgical anesthesia, one of the extended legs must be brought down before further progress can be expected in that labor. There should be no hurry, then, in the delivery of the after-coming shoulders and head, as more fœtal deaths have been caused by injuries due to haste at this stage than by asphyxia. The head should be pushed out by suprapubic pressure rather than by traction on the neck, as was formerly taught.

Transverse presentations usually diagnose themselves with ruptured membranes and a hand, and perhaps even the umbilical cord, prolapsed into the vagina. Fortunately, this complication occurs most often in multiparæ who have had a number of children in such rapid succession that the vaginal passages are large and roomy. In addition, the single leg that it is necessary to bring down to deliver by version is just over the entrance to the pelvis and under deep surgical anesthesia, and, with thorough soap-and-water cleansing of the vagina and prolapsed arm, a safe delivery should be effected without danger of rupturing the uterus or infecting the patient.

Placenta prævia makes its own diagnosis—a sudden, profuse hemorrhage without pain in the latter months of pregnancy. The degree of encroachment of the placenta matters little in the general treatment of the case; the period of gestation and whether we are dealing with a primapara or multipara are more important. There is generally a considerable interval between the first hemorrhage and a succeeding one, consequently great haste in delivery is rarely necessary. Nothing further can be gained by a vaginal examination, and with it there is great danger of precipitating a second hemorrhage and introducing infection into the cervical canal. This is one complication that should, if at all possible, have the benefit of hospital treatment to insure the life of the mother and baby; and with firm vaginal packing, and then strapping the pregnant uterus down firmly on the tampon with two-inch adhesive strips on the abdomen from above the fundus to the symphisis pubis, the patient can be transported for miles in safety and receive the benefits of blood transfusion and the extreme measures that must at times be resorted to in the conduct of this condition. In the home, resort must be had largely to the rupture of the membranes with the escape of a considerable quantity of the liquor amnii, and the administration of three-minim doses of pituitrin to stimulate and keep up continuous contractions until the uterine contents are expelled.

The prognosis for the fœtus is poor in such circumstances, but the mother should be carried through the procedure safely. Rubber dilating bags of the Voorhees type are a comparatively inexpensive addition to the obstetrical equipment, and with

their introduction into the uterus in such cases placenta prævia can be handled with greater security for both the mother and the child. It must be remembered, however, that a prompt version is usually necessary after the expulsion of the bag, with probable manual removal of the placenta to prevent post-partum hemorrhage, and adequate preparations must be ready for all these procedures before such a method is attempted in the home.

We still have eclampsia with us, and it usually comes like a thunderbolt out of a clear sky. It is astonishing to learn of the success that so many doctors in the country have with veratrum viride in the treatment of this condition, especially as they do not seem to follow a definite plan of dosage and the drug has been discarded by most obstetrical authorities.

With an initial hypodermic of morphine and an injection deep in the inner upper aspect of the gluteus maximus muscle of an ampoule 20 c.c. of 25% magnesium sulphate, initial analgesia should be established to allow of taking the blood-pressure, abdominal palpation to determine the position of the fœtus, catheterization and vaginal examination to learn whether or not the patient is advanced in labor. Further convulsions should be controlled by the injection of ampoules of 25% magnesium sulphate at proper intervals, allowing eliminative measures, gastric lavage and colonic flushing, to be performed. If the patient is ready for delivery, it should be expedited by forceps or version. If the blood-pressure is high and the patient in labor, rupture the bag of waters and let a considerable amount of liquor amnii escape. This will also expedite labor. If not in labor, 500 c.c. of blood removed by venesection will serve the purpose, and 500 c.c. of 20% glucose introduced into the vein will dilute the poison remaining in the circulation and counteract the toxemia. If the patient is in coma, the intravenous injection of one or two ampoules of 50% glucose will reduce the edema of the brain that causes the coma. Ampoules of magnesium sulphate should be carried in the equipment at all times, so as to be ready for the eclampsia that may come unheralded at any time.

In prolapse of the umbilical cord the patient should be carried to the padded kitchen table at once with knees over the end of the table and raised into the Trendelenburg position. This removes the pressure off the prolapsed cord and the method of delivery can be carefully planned. If the condition occurs with a breech or transverse presentation, then the usual delivery with the patient's hips elevated will suffice. If one is dealing with a head presentation, the condition becomes more serious. Fortunately, prolapse occurs most frequently in multiparæ with more or less complete dilatation of the cervix. Under anesthesia and with proper soap-and-water cleansing of the birth canal, a version should be performed and an extraction completed with the patient in the Trendelenburg position. This course should be pursued even if pulsations in the cord have apparently ceased and the fœtal heart sounds can not be heard, because resuscitation of the asphyxiated infant is at times possible after such delivery.

If the patient is a multipara with relaxed outlet and with the head low or on the perineum, then a rapid forceps delivery may at times be successful. The patient, however, should be kept in the Trendelenburg position until everything is ready and the first forceps tractions made in that position.

Retained placenta will be found occasionally, largely because of our tendency to squeeze and bruise the uterus before placental separation has taken place naturally. After many years of experience with the various short cuts to terminating the third stage of labor advocated from time to time, one finally learns to wait for the natural separation of the placenta before attempting its expulsion. There are two signs that will definitely indicate when this occurs: the hardening and elongation of the uterus within fifteen to twenty minutes after the birth of the child, as explained by Williams, or the descent of the umbilical cord as determined by a tape tied around it close up to the vulva just after the end of the second stage of labor, and the position of the ligature three or four inches from the vulva after separation has occurred. It is my custom to wait twenty minutes, simply laying the hand on the abdomen above the fundus to guard against any sudden relaxation, then to attempt placental expression. If this is unsuccessful, 1 c.c. of obstetrical pituitrin is injected and the attempt repeated as soon as the effect of the pituitrin manifests itself. If this fails, a second attempt is made in another twenty minutes, supplemented again by pituitrin, and a third attempt at the same interval.

If all these fail, then preparations should be made for a manual removal of the placenta under the most rigid asepsis. The patient should be anesthetized, the vulva and vagina thoroughly scrubbed with soap and water and irrigated; fresh rubber gloves, elbow length preferred, lubricated with sterile soap, should be put on and preparations should

be ready for a hot intrauterine douche and sterile gauze packing to prevent a post-partum hemorrhage. Before introducing the gloved hand into the uterus, a last attempt should be made, with the patient under anesthesia, to express the placenta by the Credé method. Failing in this, there is no valid reason for further delay, and manual removal should be practiced, followed by hot intrauterine irrigation and gauze packing as a safeguard against a possible post-partum hemorrhage.

I am well aware that I am treading upon dangerous ground when I advocate so early an invasion of the uterus for retained placenta, but it is fair to assume that a uterus which will not contract and expel a placenta in one and a half to two hours, even with the added stimulation of repeated doses of pituitrin, is very likely to relax suddenly and necessitate a precipitate invasion of the uterus to control a serious post-partum hemorrhage. It seems more rational, therefore, to set a reasonable time for placental expulsion, then to make a careful preparation to invade the uterus as described, and with such precautions avoid a possible infection.

The majority of physicians practicing at present, having been graduated in the last twenty-five years, have been thoroughly instructed in surgical asepsis. I have seen excellent obstetrical work done by such practitioners in various homes in the city and in the country, and I am satisfied that they can intelligently, safely and successfully carry out the suggestions embodied in this paper.

A BRIEF REVIEW OF ONE HUNDRED CASES PRESENTED FOR GASTRO-INTESTINAL STUDY *

By JAMES H. BABER, M.D.
Huntington, W. Va.

Of one hundred cases presenting for gastrointestinal study, 63 were males and 37 were females. Eighty-one were married, 14 were single; there were four widows and one widower.

Occupations: Twenty-five were housekeepers, 26 engaged in business, financial and commercial affairs, 13 in office work, and the remainder in miscellanous pursuits. The average age was 42 years; the youngest 17 and the oldest 83. The average weight was 147; the heaviest 211 and the lightest 84 pounds. The average height was 67½ inches; the highest 74¾ and the lowest 61½ inches.

Family history: In 25 cases the family history was either negative or was unsatisfactory. Tuberculosis was present in the families of 19 patients, cancer in 17, Bright's disease in 15, apoplexy in 12, heart disease in 11, arteriosclerosis in 5, cardiovascular disease in 2, rheumatism in 9, diabetes in 4, and epilepsy in 1.

Past history: Forty-seven patients had had constipation, 46 tonsillitis, 36 influenza, 31 gastrointestinal upsets, 28 typhoid fever, 21 gonorrhea, 19 pneumonia, 15 appendicitis, 14 each scarlatina, severe headache, and habitual bad colds; 13 bilious attacks, 12 each nervousness and impaired hearing, 11 each jaundice and hemorrhoids, 10 malaria, 9 each indigestion, dysentery, and dizziness; 8 each syphilis, dyspepsia, and weakness; 7 diphtheria; 6 each variola, bronchitis, otitis media, and nocturia; 5 each cholecystitis and rheumatism; 3 each febrile attacks (etiology unknown), hyperthyroidism, menstrual disorders, severe measles, diarrhea, orchitis, puerperal infection, and heart disturbances; 2 each tuberculosis, pleurisy, peptic ulcer, pelvic disease, asthma, tapeworm, and furunculosis; 1 each pellagra, cystitis, Vincent's angina, intestinal obstruction, Bright's disease, melancholia, neuritis, neoplasms of the nipples, syringomyelia, fractured ribs, sciatica, herpes zoster, extensive burn of face, burn of abdomen, prostatitis, erysipelas, nephrolithiasis, tachycardia, bradycardia, uterine fibroma, and uterine procidentia.

Previous operations: Twenty-six had had tonsillectomy, 13 appendectomy, 4 hemorrhoidectomy, 3 each herniotomy, cholecystectomy, and uterine suspension; 4 oöphorectomy; 2 hysterectomy; 2 each for nasal obstruction and uterine tumor; 1 each ureterotomy, perineorrhaphy, thyroidectomy, salpingectomy, mymomectomy, and for ectopic gestation.

Chief complaints: One suffered general body pain; 4 had general abdominal pain; 22 epigastric pain. In 5 of the latter the pain radiated to the precordia; in 4 to the ninth dorsal spine; in 3 to the lumbar region, and in 2 to the inferior angle of the right scapula. In two cases the pain in the gallbladder region radiated to the ninth dorsal vertebra; in 3 cases hypogastric pain radiated to the lumbar region. In two cases pain was localized in the right upper quadrant, and in 3 pain was confined to the left upper quadrant. Four had lower back pain; 3 lower leg pain; 2 each migraine and muscle pain; 4 suffered typical hunger pain. Six cases had soreness over McBurney's point; 5 had general epigastric soreness; 4 general abdominal

* Read before the Cabell County Medical Society, October 11, 1928.

soreness, and 4 had localized sore spots in the epigastrium. One each had sore spots over the ribs in front of the liver, over the left lower quadrant and over the right lower quadrant. Epigastric distress was felt in 30 cases; precordial distress in six. Twenty-nine complained of gas distention, 17 of gas belching, 24 of pyrosis, 23 of nausea, 22 of anorexia, 22 of vomiting, 11 of regurgitation of food and sour fluid; 8 of regurgitation of bitter and sour fluid; 6 of dyspepsia, 4 of borborygmus, 5 of flatulence, 7 of heavy-weight sensation in the stomach, 4 epigastric pressure, 3 each bad taste, capricious appetite, and rectal tenesmus; 2 each of globus, parageusia, melena, and gastric intolerance; one case each hiccough, polydipsia, retching, expansive sensation in the chest, very dry mouth, a pulling-drawing sensation in the epigastrium, a bubbling under the heart, and a sensation as of the stomach contained a hard object. Twenty-four complained of nervousness, 16 of heart palpitation, 13 each of dyspnea and dizziness, 12 of languor and lassitude, 9 each of malaise and insomnia, 8 of weakness, 6 of nocturia, 3 each of general bad feeling, numbness, tingling and hot flushes; 2 each of chilliness, nightmare, emotional depression, girdle sensation, and itchy skin; one each visual hallucinations, bradycardia, tachycardia, tinnitus, and a burning in the throat.

Examination: Forty-three patients were sthenic types, 37 asthenic, and 20 medium. Deformities noted comprised joints in 5 cases; the hands, spine, thorax, and the xiphoid cartilage, each 2 cases; the face and the abdomen, each one case. The skin was pale in 19 cases; inelastic and dry, in each 4; florid in two cases, and dark brown in both axillæ in one case. Telangiectasis of the face and nose was present in 3 cases. General superficial gland enlargement was found in two cases; the post-cervicals were enlarged in 15, submaxillaries in 10, laterals of the neck in 3 cases, and the epitrochlears, inguinals and axillaries, in each one case. The eyes were prominent in 8 cases, and in one case the left eye was out. In two cases each, the lids were thickened and conjunctivitis was present; in 7 the sclera was hazy, and in two cases it was icteric. Pterygium occurred in 4 cases; arcus senilus in 5, mydriasis in 3, nystagmus and hippus, in each, one. The pupils were uneven in 10 cases, in nine of which the left pupil was the larger. They were irregular and uneven in one case, myopic in two, and one presented the typical Argyll-Robertson phenomenon. The ears showed no gross pathology, but there was impaired hearing in 17 cases. The nose was the seat of indurated ulcer in 2 cases; unilateral obstruction, septum perforation, and enlarged turbinates, in each 2 cases; marked septum deviation with unilateral stenosis in 6; rhinitis, in varying degrees of severity, mostly mild, in 24 cases.

The tongue was coated in varying degrees and colors from white to a dark brown in 23 cases; in one each it was glazed and fissured. Marked tremor occurred in two cases. The gums were inflamed in 15 cases; Riggs' disease was present in 13, and Vincent's angina in two cases. Dental caries was found in 12 cases. The pharynx evidenced pathology in 13 cases; the tonsils in 36 cases; while in 24 the tonsils had been removed. The neck vessels showed increased pulsations in 7 cases. The thyroid evidenced abnormality in contour, size or consistency in 30 cases. The lungs yielded impaired percussion notes in the right upper in 5 cases; showed decreased aëration and impaired breath sounds in the right upper in 7 cases; in the left upper in two cases. Moist râles were heard in 6 cases, and labored breathing occurred in one case. The heart area was widened in 9 cases; arrhythmia was present in 8 cases; irritability in 7; weakness and a heaving impulse, in each, one; tachycardia in 5, bradycardia in two; and in one each prolonged systole, premature systole, auricular premature beat, pulsus alternans, and auricluar fibrillation. Thirteen cases had systolic murmurs and two had diastolic murmurs. The average blood pressure for the series was 124/72; the highest reading 222/78 and the lowest 90/36.

The abdomen was asymmetrical in two cases, prominent in 11, pendulous in 4, ptosed in 5, and was heavily overlaid with fat in 9 cases. Post-operative scars were seen in 9 cases; umbilical hernia in 3, diastasis recti in two; inguinal hernia and visible peristalsis, in each one case. In 14 cases the walls were flaccid and atonic, and in 3 they were generally resistant. Increased resistance was encountered in the right upper quadrant in 17 cases, in the epigastrium in 13, in the lower right quadrant in 4, and in the left lower quadrant in two cases. The lower border of the liver was felt in 13 cases; it was markedly enlarged in 3, and was nodular in 2 cases. The lower pole of the right kidney was palpable in 10 cases; in one it was very large, was ptosed, and in one case it was ptosed and loose, but of normal size. The spleen was felt in 2 cases, one showing marked hypertrophy. Soreness was elicited on pressure over McBurney's point in 12 cases, over the iliac colon in 8, over the descending colon in 4, over

the right upper quadrant in 8, over the left lower quadrant in 5, over the suprapubic region in 3, over the pylorus in 7, over the left upper quadrant in 3 cases. The pelvic colon was spastic in 15 cases. Ano-recto-sigmoidoscopic examination revealed the presence of hemorrhoidal tags in 3 cases, external hemorrhoids in 5 cases, tonic sphincter in 7, atonic sphincter in 3, rectitis in 6, rectosigmoiditis in 11, internal hemorrhoids in 6, miscellaneous superficial ulcers in 14, rectal caruncle, fistula-in-ano, rectal polyps, segments of tapeworm, in each one case. Gynecologic and genitourinary examinations showed chronic cervicitis in 10 cases, post-partum trauma and uterine retroversion, in each 3 cases; prostatic hypertrophy and absent libido, in each two cases; procidentia, nodular uterus, vaginal polyps, and vulvar abscess, in each one case. Albumen occurred in the urine in 4 cases, sugar in 8, bile in 16, indican in 3, shreds in 6, casts in 3, and blood in two cases.

The feces were abnormal in 53 cases, of which 9 were putrefactive, 8 acholic, 2 tarry, 5 mushy, and 10 scybalous. Ninety-seven cases had an average free Hcl percentage of 35°, and a total acidity of 60° following the Ewald test meal; the highest free Hcl registering 83° and the highest total acidity 104°. A 12-hour residue of carbon was found in the extracted specimens in 3 cases.

X-ray studies were had in 42 cases; 34 of the gastrointestinal tract, 8 of the chest, 5 of the gallbladder, and one of the antrum of Highmore. By this means definite pathology of the gastrointestinal tract was shown in 26 cases, of the gallbladder in 4 cases, of the chest in 7, and o fthe antrum in one case. Electrocardiographic records were obtained in two cases, both showing the presence of disease. Blood Wasserman tests were had in 29 cases, only two of which were positive. The icteric index was determined in 7 cases, and in only one was bile found in excess. One chemical examination showed a mild acidosis. Blood counts gave evidence of the presence of secondary anemia in 8 cases out of the total of 9 examined, and eosinophilia in one case. Blood sugar determinations were had in two cases, both falling within normal limits. Microscopic examination of the bile in 3 cases revealed pathology in only one case.

Summary of diagnosis and findings: In a study of 100 patients complaining of gastrointestinal symptoms the following basic diagnoses were made: Seventeen, or 17%, were given a diagnosis of organic gastro-duodenal lesions. This group includes two gastro-pyloric cancers, one gastric ulcer, 4 juxta-pyloric ulcers, 9 duodenal ulcers, and one of gastro-pyloric lues. Twenty-six received a diagnosis of gall-tract disease, 8 functional stomach, 6 appendicitis, 5 constipation, 6 colitis, 5 cardiovascular disease, 4 pulmonary disease, 8 general neuroses, and 15 miscellaneous diseases, which comprise 5 cases of gastric atony, two of chronic arthritis, one each senile dementia, manic depressive psychosis, primary lues, acute gonorrhea, pyosalpingitis, chronic interstitial nephritis, chronic mid-brain and ciliospinal disease, and gastric crisis of tabes. In addition to the basic diagnoses, the following concomitant conditions were noted: Thirty-six had infected tonsils; 30 abnormal thyroids, 12 of which were toxic; 19 colitis, mostly mild; 16 constipation; 24 rhinitis, mild in most of the cases; 14 miscellaneous superficial rectal ulcers; 12 pathologic prostate; 12 post-operative adhesions, 14 neurasthenia, 15 gingivitis, 13 dental caries, 10 endocervicitis, 4 cardiovascular disease, 8 each secondary anemia and gastric neuroses; 7 hyperpiesia, 6 each pyorrhea, visceroptosis, internal hemorrhoids, and transient glycosuria; 5 each anxiety neurosis, achlohydria, and hyperacidity; 4 each pyloric stenosis, pterygium, and psychasthenia; 3 each uterine hypertrophy and coloptosis; two each hepatomegalia, nasal septum perforation, upper respiratory infection, glossitis, Vincent's angina, nephroptosis, unilateral nasal obstruction, hypertrophied turbinates and neurocirculatory asthenia; one each splenomegalia, nephroma, tapeworm infestation, trichomonas intestinalis, sinusitis, syringomyelia, uterine procidentia, vaginal polyps, rectal polyps, and cervical caruncle.

Conclusions: It is significant that cardiovascular-renal disease occurred in the family history of as many patients (45) as did tuberculosis, carcinoma, and rheumatism combined. In the past history the frequent coincidence of tonsillar disease, rhinitis, the focal infections and the acute infectious diseases should be considered, since the belief is gaining impetus that they not only augment the severity of existent gastrointestinal maladies but that they are justly accused of participating in their pathogenesis. Constipation, with its innumerable causes, was present in the past history of 47% of these patients, and is responsible for a fair percentage of digestive disorders. Thyroid abnormalities occurring in 30% of this series seemed more anatomic than dynamic, since only 12 had goiter symptoms, and for the remainder a local goitrous region is suggested.

The frequency with which recto-sigmoid diseases

are associated with the dyspepsias is notable, having been manifest in 46% of this series.

The high percentage incidence of organic disease of the upper gastrointestinal tract reported in this series would certainly have been reduced had a sufficient number of cases been reviewed, for statistics issuing from the most reliable quarters show that only about 15% of patients complaining of gastric symptoms have organic lesions in the stomach or the duodenum, and that extrinsic causes furnish the basis of complaint in approximately 80% of the cases. Gall-tract disease is responsible for about 20% of stomach complaints; duodenal ulcer 10%; appendicitis, constipation, diseases of the heart and lungs combined, and colitis, each approximately 6%. Cancer is present in about 3% of all cases of dyspepsia, and is more commonly met with than is gastric ulcer. Secretory studies are of undoubted value both from the standpoint of diagnosis and of therapeusis, notwithstanding their abandonment by a few of the large foreign clinics. It is well to remember that most of the leading subjective symptoms are common to both organic and inorganic diseases of the digestive tract.

A painstaking history with a careful evaluation of what it discloses is of primary importance in the diagnosis of digestive diseases generally, while the x-ray is, by far, the most important factor in the diagnosis of organic lesions of the gastrointestinal tract; yet this fact should not deter us in carefully correlating what it reveals with both laboratory and clinical findings.

THE NECESSITY FOR THE EARLY DIAGNOSIS OF CARDIAC DISEASE *

By MILTON C. BORMAN, M.D.
Montgomery, W. Va.

Disease of the cardiovascular system now leads the various causes of death in the United States. Because of the early recognition of disease, various prophylactic and active therapeutic measures may be employed to abort, alleviate, delay, or actually cure pathological processes. It is toward this goal, the early diagnosis and treatment of disease, that our profession should constantly strive. Because of his prolonged and intimate association with the patient, it is the family physician who occupies the strategic point in the active warfare between man and disease.

The secret of accurate diagnosis rests upon the careful consideration of all possibilities, the discovery and interpretation of all facts in each case, and a final judgment of probability which takes all these things into account. That judgment is likely to be fallacious if any of the above enumerated factors are omitted.

In the diagnosis of heart disease, we must keep the possibility of heart disease constantly in mind. Surely, if it augurs such serious import to the patient, we should never neglect it. Instead, we should adopt every possible means to stimulate and foster our interest in cardiac disease. As in tuberculosis and syphilis, so in heart disease we failed to diagnose the condition because we did not think of it.

The etiological incidence of heart disease varies somewhat in different parts of the country. In the main, however, there are three types which, in descending order of importance, are hypertensive, rheumatic, and luetic. All other types comprise a small group of secondary importance.

Hypertensive Cardiac Disease.—Hypertension, if long continued, produces cardiac disease. Therefore, every hypertension patient is a potential cardiac patient. As the incidence of the rheumatic and syphilitic types becomes less, due to more active prophylaxis, social work and public education, the incidence of the hypertensive type proportionately increases. If these facts are recognized, as well as our ability to control, to a certain degree, some of the factors responsible for hypertension, we shall be able to prolong life and reduce, absolutely, the incidence of organic heart disease as a cause of death.

The prehypertensive stage of the disease should be recognized. The descendants of a hypertensive parent (or parents) should be encouraged early in life to choose occupations and engage in activities which do not call forth great physical, mental or emotional response. They should get at least eight hours' sleep, and should rest after the noonday meal. Work should not be undertaken at night. Their diet should be liberal in choice, restricted only in quantity to avoid obesity. Recognition of the various factors which may produce hypertension should lead the patient, predisposed thereto, to avoid them.

In the early hypertensive stage, measures suggested above should be more actively and vigorously carried out. Sodium chloride should be restricted, and the benefits of sedatives should be obtained. Potassium thio-cyanate and potassium iodide are being used almost routinely in some cardiac clinics. Longer periods of rest, change in environment,

---

* Read before the Raleigh County Medical Society, October 25, 1928, and before a joint meeting of the Kanawha and Fayette County Medical societies, November 8, 1928.

vacations, sea voyages, complete rest in bed for twenty-four hours each week, may prevent the rapid development of change. *Complete nervous relaxation should be sought.* The patient should not be made an invalid. Exercise well within the limit of cardiac power may assist in aborting hypertension.[1] Once hypertension is found, as well as in the prehypertensive stage, every effort should be made to discover etiological factors. In the essential type in women occurring during and after the menopause, sedatives and ovarian therapy have been moderately useful. Not knowing what causes arteriosclerosis, we are unable to carry out prophylactic or curative measures with complete assurance of success. The worshipers of Bacchus, Venus and Vulcan have been described as being particularly prone to develop arteriosclerosis. I believe that in many of these patients there is a definitely inherited tendency toward arteriosclerosis carried over in the germ plasm. I have seen post-mortem examinations upon the most zealous worshipers of the above classic deities who, at eighty or even ninety years of age, showed little or no arteriosclerosis. Other patients from forty-five to fifty years old, of opposite morals and habits, had extensive arteriosclerotic changes throughout their bodies. The prophylaxis of the primary nephritic hypertension consists in the early removal of diseased tonsils and other foci of infection, the prevention of upper respiratory infections, sudden chills, scarlet fever, and other acute infectious diseases. Joslin [2] has called attention to the menace of hypertension resulting from prolonged high fat diet in diabetes, which would apply, no doubt, to the high ketogenic diet of epilepsy. The hypertension associated with thyrotoxicosis should be remembered. Administration of iodin, immediately followed by partial thyroidectomy, should be carried out.

In the later stages of hypertension, careful inspection as to the size of the heart, and auscultation to discover a systolic murmur, are valuable for prognostic reasons. The x-ray or fluoroscope will give evidence as to the exact size of the heart and great vessels. An inverted T-1 or T-2 wave, with moderate or marked ventricular predominance in the electrocardiogram, will confirm our impression of cardiac damage. Still later, marked changes in rhythm, or signs and symptoms of frank cardiac decompensation, appear. The diagnosis should be made and the treatment should be begun a long time before these later events occur. That cardiac hypertrophy may occur independent of arteriosclerosis and hypertension must be remembered.[3, 4]

Rheumatic Heart Disease.—It is in the child that the heart is most often involved in the rheumatic chain of infections. In the adult, arthritis is more common. Especial attention must therefore be paid to children. A few facts may be stated in the diagnosis of heart disease in children which are important to remember. The apex beat is not normally visualized before the second year. The apex, from two to six years, lies 6 cm. to the left of the mid-sternal line in the fourth interspace, one cm. outside the nipple line. From six to twelve years, the apex lies beneath the fifth rib, 7 cm. from the mid-sternal line in the left nipple line. From twelve years upward, the apex lies in the fifth interspace, 8 cm. from the mid-sternal line, 1 cm. within the nipple line. The right border from two to six years is 2 cm., from six to twelve years 3 cm., and from twelve years upward 4 cm. to the right of the mid-sternal line. Variations occur with the size of the child, its age, and conformation of the chest. It is of fundamental importance to remember that cardiac enlargement may occur within twenty-four hours of the onset of rheumatic infection, although it is usually noted on the third or fourth day. We must not expect large, swollen joints in these children to make a diagnosis of rheumatic infection. Cardiac enlargement alone will make this diagnosis with vague muscle, joint or body pains. Vomiting and nausea have been ascribed [5] as being very typical of an acute rheumatic pericarditis in children. Dr. Hugh McCulloch [6] has described the sprawling tongue that flops out of the mouth, the "society smile," and the hyperextension of the fingers and hands in the stages before a frank chorea develops. Growing pains, tonsillitis, quinsy, torti collis, erythema nodosum and subcutaneous hemorrhages must be mentioned as manifestations of rheumatic infection in which the heart is so frequently involved. Most clinicians believe that in rheumatic infections the heart *is* always involved. These infections should be actively treated by rest, salicylates, removal of foci of infection as soon as practicable, and avoidance of all other infections, especially those of the upper respiratory tract. Repeated infections cause progression in cardiac involvement, and a rheumatic aortic lesion nearly always means antecedent attacks, the valve most commonly involved being the mitral. We must listen for the friction rub of a pericarditis, and must watch, in the more fully developed cases, for the bulging precordium and systolic retraction of interspaces, for our prognosis in these cases is much

more serious. Accurate diagnosis may mean active and adequate treatment with prevention of ultimate invalidism.

Luetic Cardiac Disease.—It is not commonly known that, while the central nervous system is involved in only two to three per cent of all luetic patients, twenty to twenty-five per cent have cardiovascular changes, including aortitis, angina pectoris, aortic regurgitation, and thoracic aneurysm. Cardiovascular damage should be suspected in every case of syphilis, and thorough and repeated investigation of the cardiovascular system should be made. This investigation should be made as soon as the diagnosis is suspected or established. The importance of early observation in these patients has been emphasized by Brooks,[7] who has reported the death of a luetic patient before the secondary rash appeared or the diagnosis made, in whom post-mortem examination revealed a minute perforation of the aorta with typical syphilis in the myocardium and aorta. He has also reported changes in rate, rhythm, intensity of heart sounds and tone quality early in the secondary stage which cleared up promptly under specific treatment.

Luetic infection of the cardiovascular system can be detected early, and, if treated adequately at that time, will prevent such unfortunate irremediable conditions as thoracic aneurysm and aortic regurgitation.

The continuation of treatment should not be based upon serological evidence. The luetic patient should be under observation throughout his lifetime and at frequent intervals under active antiluetic treatment. The diagnosis of luetic cardiovascular disease should be made early, for the treatment can be more specifically directed toward the infection if the visceral changes are specifically recognized. The iodides, mercury, bismuth, and occasionally the arsenicals are chiefly used in this type of syphilis.

Again, it is the family physician who most often sees these patients early. The significance of the above facts should also be constantly thought of by urologists and genitourinary specialists.

Summary.—The necessity for the early diagnosis and treatment of the three main types of heart disease, hypertensive, rheumatic, and luetic, has been emphasized. Such early diagnosis and treatment is necessary to avoid, abort, alleviate, delay, or actually cure pathological processes, to avoid progression of disease with ultimate crippling and death. Early diagnosis of cardiac disease will soon translate itself into vital statistics and result in increased longevity.

REFERENCES

1. Foster, Nellis B.: Treatment of Hypertension, *J. A. M. A.*, 1922, 79: 1089.
2. Joslin, Elliott P.: The Ten-Year Diabetic, *Am. J. M. Sc.*, 175. 472.
3. Cabot, Richard C.: *Facts on the Heart*, p. 770.
4. Scott, A. J., and Zeiler, A. H.: Congenital Cardiac Hypertrophy, *Am. J. Dis. Child.*, 1926, 31: 31.
5. Burnett, James: The Rheumatic Heart in the Child, *Clin. J.*, 1926, 55: 61.
6. Personal communication.
7. Brooks, Harlow: Quoted by E. S. Smith, *Am. J. Syph.*, vol. IV, July, 1920.

ACIDOSIS *

By H. A. WALKUP, M.D.
Mt. Hope, W. Va.

Acidosis has only recently come to be recognized *in toto*. It is surprising to what extent this condition is the cause, or an accompaniment, of disease. It is an etiological factor in many ailments of quite dissimilar symptomatology, and it occurs in all ages, from infancy to old age.

Acidosis has been variously defined by different investigators. Howell defines it as "a diminution in the amount of alkali in the blood available for the protection of the reaction, or, as it is frequently expressed, a diminution in the alkali reserve of the body." Haliburton refers to it as "an increase of the H-ion concentration in the blood." Macleod defines acidosis as "a condition in which the concentration of bicarbonate in the blood is reduced below the normal level." Fischer confines the term to the condition of "intoxication with acid." "The mere finding of various abnormal acids or 'acidosis compounds' in the urine or elsewhere does not yet mean an acid intoxication." Sellards says that "acidosis may be very simply and correctly described as a diminution in the reserve supply of fixed bases in the blood and other tissues of the body. The definition should not be limited to the carbonates alone, but should include the other fixed bases of the body; likewise the changes should not be limited to the blood but should include the other tissues as well."

To get a clear conception of acidosis, it is necessary to delve a little into the chemistry of the blood. According to Matthews, blood has in it a good deal of some very weak alkali, *i.e.*, sodium bicarbonate. The total alkali varies with the amount of protein present and under other circumstances. In man it has been found to be equivalent to a sodium carbonate solution of 0.34 to 0.59 per cent strength. It is somewhat reduced after violent exercise, in

* Read before the Fayette County Medical Society, June 11, 1928.

partial asphyxia, and in diabetes. This total alkalinity of the blood is due to the presence in the blood serum or plasma, and in the corpuscles, of sodium bicarbonate, sodium carbonate, and a little disodium hydrogen phosphate; and to the presence of the alkali salts of the proteins of both the corpuscles and the plasma. When a strong acid is added to the blood, it takes away the sodium and potassium from the weak acids, disodium hydrogen phosphate, and the proteins, to make neutral salts of the strong acid. The proteins of the blood will also, in another way, combine with the acid by means of the amino groups so, in two ways, proteins neutralize acids produced in the tissues or those which find their way into the blood. The acid-combining power of the blood is of very great importance, for it is by this virtue that the blood is able to pick up the carbon dioxide from the tissues and carry it into the lungs. It is also of very great value in caring for any excessive pathological acid production in the tissues, such as occurs in diabetes for example.

According to Howell, the blood possesses a hydrogen-ion concentration less than that of a neutral liquid like water, and is, therefore, slightly alkaline, the arterial blood being a trifle more alkaline than the venous, owing to the fact that the latter contains more carbon dioxide.

A neutral solution is one in which the hydrogen-ions and hydroxyl-ions exist in equal concentrations. If the hydrogen-ions are in excess the solution is acid; if the hydroxyl-ions are in excess the solution is alkaline. Determinations of the hydrogen-ion reaction of the blood show that its range of variation is very limited. Yet we know that in the metabolism of the body acids and bases are being formed constantly and given to the blood; and in our foods, also, we may ingest acids or alkalies, which are absorbed into the blood and which, it might be supposed, would change its reaction. Since the reaction remains remarkably constant, it is evident that regulatory mechanisms must be present to provide for the elimination or neutralization of any excess of either acid or alkali. A general regulation of this kind is provided in the activity of the lungs and of the kidneys. The concentration of carbon dioxide in the body is kept within certain normal limits by the regulation of the respiratory movements.

When the amount of carbon dioxide tends to rise, as in muscular exercise, for example, the corresponding increase in the ventilation of the lungs provides for a method of eliminating the excess of this "volatile" acid. Under the same circumstances, also, the kidneys furnish a more acid secretion by which any excess of non-volatile or "fixed" acids (or bases) is prevented from accumulating in the blood. In addition to the regulatory methods of this kind, it has been shown that the composition of the blood itself is such that considerable amounts of acids or alkalies may be added to it directly without altering distinctly its hydrogen-ion reaction. This peculiarity is due to the presence, in the blood, of salts of carbonic acid and phosphoric acid. We find in the blood a mixture of monosodium dihydrogen phosphate and disodium monohydrogen phosphate, sodium bicarbonate and carbon dioxide, and it has been shown that such a mixture is peculiarly adapted to preserve its neutrality with relatively wide limits when acids or alkalies are added to it. A mixture of this kind constitutes what is commonly called a "buffer" solution. Monosodium dihydrogen phosphate is weakly acid, the disodium monohydrogen phosphate is weakly alkaline; but a mixture of the two salts in equimolecular proportions gives a neutral solution and the addition of reasonable amounts of acid causes no perceptible change in the reaction, since it acts to change some of the disodium phosphate to monosodium phosphate, and thus simply alters the ratio between the concentrations of the two salts to an extent which does not appreciably influence the hydrogen or hydroxyl-ion reaction. The relative concentrations of sodium bicarbonate and of carbon dioxide in the blood are especially important in preserving the weak alkalinity characteristic of the blood. Here, again, it is the ratio of the carbon dioxide to the sodium bicarbonate which controls the hydrogen-ion concentration, and experiments have shown that this ratio may be varied within considerable limits without materially influencing the hydrogen-ion reaction. If acid be added, some of the bicarbonate is broken up and carbon dioxide is liberated; if alkali be added, some of the carbon dioxide is changed over to the bicarbonate. In the normal processes of the body there is a constant production and liberation of acids which would tend to change the reaction of the body liquids were it not for the protection afforded, first, by the buffer action of the bicarbonates and phosphates of the blood, and, secondly, by the action of the lungs in eliminating any excess of carbon dioxide and of the kidneys in excreting any excess of fixed acids.

The amount of fixed acids added to the blood as a result of the processes of metabolism may vary widely and may be greatly increased under certain pathological conditions, as in diabetes, for example.

While such an increase in the acids added to the blood may not change its reaction perceptibly, owing to the protective mechanisms described, it will tend, of course, to reduce the amount of protective sodium bicarbonate, since these acids will combine with the sodium and drive off the carbon dioxide which is then removed by the lungs. The result in such cases is a diminution in the amount of alkali in the blood available for the protection of the reaction, or, as it is frequently expressed, a diminution in the alkali reserve in the blood. Such a condition is designated as "acidosis," although the reaction of the blood may still be alkaline. Two relatively simple reactions have been suggested to test for the existence of "acidosis" as thus defined. One is to determine the capacity of the blood plasma to absorb carbon dioxide under a given pressure. The normal carbon dioxide is from fifty to sixty per cent (by volume), and a decided fall below this level indicates a diminution in alkali in the blood. The second is to ascertain the amount of sodium bicarbonate which, given by mouth, suffices to give an alkaline reaction to the urine. In acidosis a more than normal amount of bicarbonate will be required to give this result. Tests in detail will be given further on.

Fischer, on the other hand, maintains that the normal blood is neutral in reaction, and that this is in accord with observations of Fraenkel. In the terms of modern physical chemistry, an acid reaction is due to the presence of free hydrogen (H) ions, and alkaline reaction to the presence of free hydroxyl (O,H) ions. A neutral reaction means, therefore, one of two things: either that neither of these ions is present, or that just as many of one kind as of the other are present, so that they balance each other. The latter, according to Fischer, is the case in the human body. The neutral reaction of the blood—and from this it is assumed that the tissues themselves are also neutral in reaction—perhaps appears at first sight surprising in the light of other teachings that the body fluids and the cells are all alkaline. But these teachings Fischer considers erroneous, on the score that they are based upon an improper interpretation of the results obtained by titration methods. The blood, for example, has been generally held to be alkaline because it is capable of neutralizing acid; but, as we know now, the power of a solution to neutralize an acid is no index of its content of free (*i.e.*, active) hydroxyl ions, which is the true measure of its alkalinity. Of further interest is the fact that the neutral state of the blood and of the tissues is maintained in health against the introduction of considerable acid or alkali into them. When exposed to the action of an acid, it is found that the normal hydroxyl ion concentration of the blood drops with the progressive pouring of acid into it in the form of a curve which falls only very slowly at first and then more rapidly.

Two factors are involved in this process. The first lies in the fact that such salts as sodium carbonate and disodium hydrogen phosphate (official sodium phosphate) are capable of uniting with acids (carbonic and phosphoric) to form salts of a higher hydrogen content, namely, sodium bicarbonate and sodium dihydrogen phosphate (sodium acid phosphate), but which in their dissociation yield only a few more hydrogen ions than the salts from which they were originally formed and which were present in the blood to begin with. In other words, there is only a slight increase in the concentration of the hydrogen ions (increase in hydrogen ion acidity) in spite of the considerable introduction of acid into the system. The other and perhaps lesser element in the maintenance of the blodo neutrality resides, according to Fischer, in the amphoteric character (the power of combining either with acids or aklalies) of the colloids found in the blood and tissues. The albumens, for example, can unite with considerable quantities of acid or of alkali without any decided change in their behavior toward indicators. However, it should not be inferred from these statements that the blood or the tissues are not sensitive even to minute additions of acid (or alkali) to them. Such an increase in the concentration of the carbon dioxide as occurs when normal arterial blood becomes venous is already sufficient to reduce the hydroxyl ion concentration in the latter to one half that existing in normal arterial blood.

MacLeod lays great stress on that part played by sodium bicarbonate in the blood. He says this represents the excess of base which is left over after the fixed acids have been neutralized. It represents the base that is available for neutralization of any more of such acids that may appear—a measure of the reserve of "buffer substance" or, more specifically, the alkali reserve of the body. Under normal conditions the amount of sodium bicarbonate in blood plasma is very constant (amounting to from 50 to 65 per cent volumes CO_2), and when it is reduced it indicates that an excess of fixed acids must be present. This is taken to constitute the real definition of acidosis, namely, "a condition in which the concentration of bicarbonate in the blood is reduced below the normal level." The bicarbonate may

become reduced either because of the appearance of improperly oxidized fatty acids (like betaoxybutyric and acetoacetic, when carbohydrate metabolism is upset, as in diabetes or starvation), or because the acids produced by a normal metabolism are inadequately eliminated by the kidneys, as in nephritis.

A sustained increase in the acid ratio is incompatible with life. The sodium bicarbonate is the buffer; it is the factor of safety that prevents death due to poisoning with acid.

There are two types of acidosis: (1) that arising from failure of kidney elimination, or retention acidosis, seen chiefly in glomerular nephritis; and (2) metabolic, due to disturbances of metabolism and including any condition characterized by insufficiency of bases and an excess of acid in the economy. Diabetes, the vomiting of pregnancy and other expressions of gestational autotoxemia, eclampsia, certain infectious diseases (such as influenza and pneumonia), the common "colds," anesthesia, shock, etc., show the latter type of disturbance.

The necessity of avoiding a marked acidosis, says Sellards, is evident when we consider the importance of the fixed bases in metabolism. "Normally, oxygen is carried by the arterial blood from the lungs to the tissues where the carbon is burned and the resulting carbon dioxide is carried as carbonate, largely sodium bicarbonate, by the venous blood to the lungs, where the carbonate breaks up, the carbon dioxide is exhaled, the normal carbonate returning by the arterial blood to the tissues to take up and carry away more carbon dioxide. With the depletion of the carbonates, the oxygen is still carried by the arterial blood, but the resulting carbon dioxide gradually accumulates in the tissues, since there is not an adequate supply of bases for transporting it to the lungs. With the accumulation of carbon dioxide, the tissues are no longer able to utilize the oxygen brought to them; the individual becomes dyspneic and suffers from subjective symptoms of suffocation just as though he were deprived of air. The oxygen, since it can not be taken up by the tissues, remains in the venous blood, giving it an arterial color, the blood in the veins ordinarily being dark simply by reason of the withdrawal of oxygen rather than on account of the presence of carbon dioxide. This exhaustion of carbonates leads first to the development of air hunger and eventually death, if the exhaustion is sufficiently extreme. The cardinal feature of acidosis is that there is neither an increased production nor an accumulation of acid in the body, but merely the reserve supply of alkali-yielding substances is depleted in the prevention of the appearance of acid in the blood."

A number of different criteria have been suggested as measures of the degree of acidosis: First, lowered carbon dioxide combining power of the blood; second, lowered alveolar carbon dioxide tension; third, decreased affinity of hemoglobin for oxygen; fourth, reduced alkalinity of the blood (Sellards test); fifth, increased hydrogen ion concentration of the blood; sixth, increased urinary acidity (hydrogen-ion acidity); and, seventh, retention of alkali by the body in cases in which the kidneys are incapable of rapidly excreting any excess of alkali. All these methods have furnished valuable information in the development of our knowledge of this subject, but, according to Myers, the first, second, and seventh have yielded data of special clinical value. Although the carbon dioxide tension of the alveolar air may readily be ascertained with the Friderica or Marriott apparatus, the information is not as reliable as the carbon-dioxide combining power of the blood determined by the Van Slyke method.

These methods, however, are not practical for the general practitioner, and simpler measures must be resorted to: the bicarbonate depletion of the blood may be determined roughly by the administration of sodium bicarbonate, as pointed out by Sellards and Palmer. Normally, from 5 to 10 gm. of sodium bicarbonate are sufficient to change the reaction of the urine to neutral; if this does not occur, and the urine remains decidedly acid in any clinical case, and nephritis can be excluded, it may be assumed that acidosis exists. Where the kidneys are diseased and the elimination of the excess of alkali is impaired, the blood carbon dioxide power may reach figures far above 70 volumes per cent or even 100 volumes per cent before the urine becomes alkaline from massive doses of bicarbonate.

Henderson has suggested the very simple test of holding the breath as an index to acidosis. A normal person can hold his breath for from 30 to 40 seconds without an especially deep inspiration, but the period diminishes in proportion to the reduction in the blood alkali. This method is considered especially valuable when contemplating the administration of an anesthetic, and general anesthesia is contraindicated if the patient can not hold his breath for at least 20 seconds.

The degree of acidosis present can easily be determined by the application of a few simple chemical tests. The appearance of acetone, diacetic acid or

betaoxybutyric acid in the urine always means that an acidosis may take place. A commonly employed test for each of these pathologic ingredients is here given:

Diacetic acid may be detected by mixing 5 c.c. of urine with two or three drops of glacial acetic acid and 1 c.c. of 0.5% solution of starch, then adding 6 drops of 1% tincture of iodine. Normal urine turns blue. When no blue tint develops—not even for a minute—diacetic acid is present. By graduating the tints in a set of test tubes, it is possible to estimate the amount of diacetic acid present.

Another method is to add to 5 c.c. of urine two or three drops of glacial acetic acid, then 0.5 c.c. of decinormal sodium nitroprusside solution, overlaying the mixture with concentrated ammonia water. A violet ring is at once produced if diacetic acid is present. One part of diacetic (acetoacetic) acid in 30,000 will give a positive reaction. Gerhardt's reaction with solution of ferric chloride is not reliable. When diacetic acid is present the addition of a 10% ferric chloride solution to the urine yields a Bordeaux red color; but many other substances produce the color, such as salicylic acid and substances excreted after the ingestion of antipyrine or phenacetin.

To detect acetone conveniently, add to 0.5 c.c. of urine (or, better, urine distillate) 1 c.c. of a 10% solution of salicylaldehyde; shake well, introduce a piece of sodium hydroxide about the size of a pea, and set the mixture aside. If acetone be present to the extent of 0.01% or more, a deep orange-red ring will form at the juncture of the two layers; normal urine gives a yellowish-to-brown ring.

BLOOD-PRESSURE CHANGES DURING HEART FAILURE *

Illustrated by Patients with Acute and Chronic Coronary Occlusion

By LESLIE T. GAGER, M.D.
Washington, D. C.

In some degree, the interaction between a patient and his disease is always unique. Heredity, constitution, predispositions that go with age, sex, social and economic status, and the like, combine with the person's physical and mental condition at the moment of becoming ill, to make the response to infection, strain or dyscrasia, themselves also infinitely variable, a matter of unending newness and interest to the physician. In the degree to which, by eliciting and analyzing the symptoms and signs of disordered structure and function, he can unravel these many threads of disease and follow their course, he is, in the wide and best sense, a biologist, a student of life.

And, on occasion, nature produces in the sick man phenomena which have almost the force and precision of the controlled experiment in the laboratory. Then the physician at the bedside, if he avails himself of that chance which Pasteur said comes only to the prepared, has, for the time being, the opportunity to become the investigator. The life of Sir James Mackenzie, which has recently been presented in such readable form by Wilson, is an example of the possibility of combining everyday practice and revolutionary contributions to medicine.

Just as knowledge of the cardiac arrhythmias was clarified by the graphic methods of the Burnley practitioner, so an understanding of the nature of blood-pressure changes has continued to develop with the use of precise means for their determination. That we possess this clinical method of instrumental precision is due in large measure, it is fitting to say in this anniversary year, to a university thesis which appeared exactly a century ago, describing the mercury manometer and its accurate application in measuring the aortic force of the heart beat. The work of Poiseuille, accomplished at the age of 29, is a landmark in physiology.

This pressure, under which ventricular systole must expel the blood into the aorta, is made necessary by peripheral resistance to blood flow and made possible by the strength of the heart beat. The two patients, whose histories I shall give, illustrate each of these hard-won physiological facts. The other factors in arterial tension, such as blood volume and blood viscosity, are, except under unusual circumstances, of distinctly secondary importance.

Circulatory failure, it follows, may be divided into two main types—peripheral and central. The first arises from disturbances in tone, loss of vasomotor control of the arterioles and capillaries, while the second type of failure is the result of any disorder of the heart which impairs its function as distributor of blood. This fundamental distinction I mention in passing because it is of such practical importance in treatment, for measures which are helpful in cardiac decompensation may have little or no effect in peripheral failure, and conversely.

Types of Heart Failure.—Heart failure itself is

---

* Read before the George Washington University Medical Society, November 17, 1928.

From the Cardiac Clinic of the George Washington University Hospital.

commonly divided into the congestive type and the anginal type, the former set apart by the dyspnea of effort and the phenomena of venous engorgement, the latter by the predominance, in the clinical picture, of pain of segmental distribution. I think there is evidence, also, for a third type, distinct in its pathologic physiology—that of insufficiency of the left ventricle, the result of which is neither congestion nor pain, but an inadequate systemic blood supply. The vital centers in the medulla are especially affected and the localized condition of anemia calls forth compensatory adjustments, lacking which there develop paroxysmal dyspnea and associated signs of medullary asphyxia.

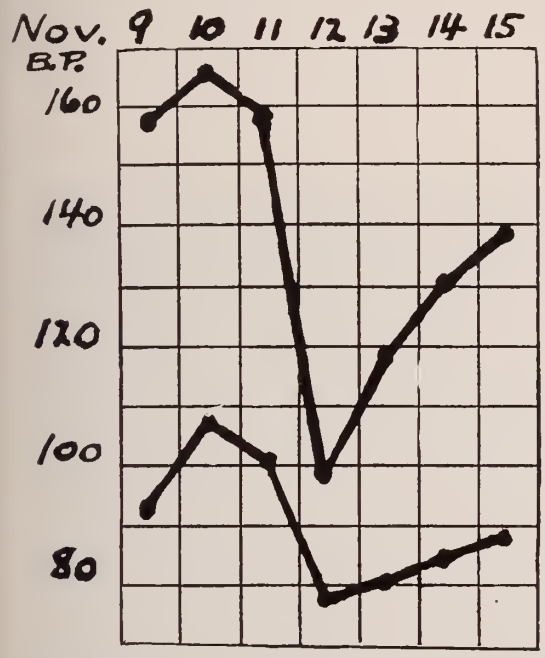


CHART 1. Acute hypotension following coronary occlusion. Man, aged 56.

The response of arterial blood-pressure to these types, pure or combined, of heart failure naturally is often of complex nature, by reason of the number of factors involved. Severe pain, for example, sets in motion the mechanism of general vasoconstriction, and during an attack of angina a sharp, though temporary, rise in blood-pressure is a common finding. With rest in bed, sleep, attention to diet, and general relaxation, one patient, as cardiac compensation is restored, may show a gradual fall in blood-pressure while another, with the removal of burdens to the circulation and gain in strength, may show a steady rise. Again, the ability of a manifestly failing heart to maintain a constant level of high pressure to the very hour of death is sometimes remarkable.

I wish to limit my specific observations, however, to the accounts of these two patients, selected because their blood-pressure findings during heart failure form an instructive contrast between acute and chronic disease and offer useful suggestions as to treatment.

CASE REPORTS

CASE I.—A man, aged 56 years, a clerk, sought treatment because of an attack of severe pain beneath the upper sternum, radiating down the inner sides of both arms.

No family history of heart disease was obtained, and the patient had been well until a respiratory infection ten years before was followed by breathlessness on exertion, a circumstance which led to lessened exercise and gain in weight to the point of obesity. For several months there had been, at times, a sense of oppression in the upper chest, always ceasing with rest.

The examination disclosed an obese man, free from pain, and circulatory findings of slight enlargement of the heart to the left, muffled heart sounds, moderate peripheral and retinal arteriosclerosis, blood pressure 156/92, pulse rate 72, rhythm regular. Glycosuria was also present, with an initial blood sugar of 0.328%, which diet and small doses of insulin corrected without incident.

The day after the first attack of substernal pain the patient, against advice, went back to work. His duties were light, but the trip from office to home entailed climbing a hill and three flights of stairs. That evening, a second attack of pain came on, which was agonizing, lasted for thirteen hours, and was unrelieved by rest, nitroglycerine or sedatives. The blood-pressure rose during this crisis of pain to 160/108, and on the following day was 158/100. Pain had now disappeared, but there was weakness, and on the next morning, 36 hours after the onset of pain, the blood-pressure had fallen sharply to 98 systolic, 78 diastolic. Under absolute rest the blood-pressure now rose gradually and the weakness disappeared. The highest temperature was 100°. No significant changes were made out in heart or lungs. Digitalis was withheld.

After three weeks, during which time the patient was symptom-free, he was allowed to go about, and at this time an electrocardiogram showed evidence of an affection of the heart muscle in abnormal T waves in the first two leads. A year later the patient was continuing at work, had lost some of his overweight, and showed good cardiac function, with slightly elevated blood-pressure.

The diagnosis here was coronary arteriosclerosis, with thrombosis of one of the smaller branches of the left coronary artery, by which a certain portion of the ventricular muscle was temporarily thrown out of function, thereby restricting cardiac output and causing an abrupt fall in arterial tension. At no time was there shock. Collateral circulation, it may be assumed, was promptly established, and the small

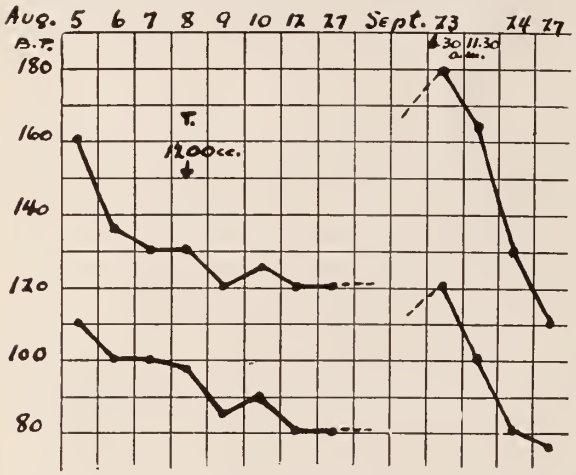


CHART 2. Acute hypertension in cardiac failure. Man, aged 62 years, with degenerative changes after infarction.

area of infarction was converted into scar tissue. With this experience as a warning, the patient was willing to mend his dietary and hygienic ways, and his course was satisfactory.

CASE II.—A man, aged 62 years, a restaurant-keeper, is another example of coronary artery occlusion, in which myocardial damage was much more extensive and crippling.

Until the age of 60 years the patient's health had been excellent, and examinations, such as those for insurance, repeatedly had shown normal findings.

In November, 1926, on a hunting trip, there was an attack of severe pain beneath the sternum which lasted for one and a half hours and made him feel that he was going to die. For several months thereafter there were râles in his lungs and he was under suspicion of having pulmonary tuberculosis. Eventually an x-ray was taken and the enlarged heart was discovered. In February, 1928, a second severe attack occurred, the pain lasting eight hours. Marked decompensation followed, and because of a large mass which now appeared and persisted in the right hypochondrium the patient was told that a cancer was probable.

An examination on August 5, 1928, disclosed an anxious, elderly man, unable to sleep because of orthopnea, unable to eat because of nausea and epigastric fullness. The veins of the neck were distended, the heart was enlarged both to right and left, the rate was 110 beats per minute, a gallop rhythm was present, the right chest was flat below the scapular spine, and a tender liver occupied the upper part of the abdomen. The blood-pressure was 160/100. The peripheral arteries were thickened, the retinal arteries not notably changed.

It was decided to give digitalis in effective doses and the nausea promptly diminished and vanished. A thoracentesis yielded 1200 c.c. of liquid from the right pleural cavity, and the patient was able to sleep flat in bed for the first time in months.

As cardiac compensation was restored, the blood-pressure fell until a normal level of 120/80 was reached and maintained.

After an interval of a month, during which time the patient gained strength and digitalis was reduced,

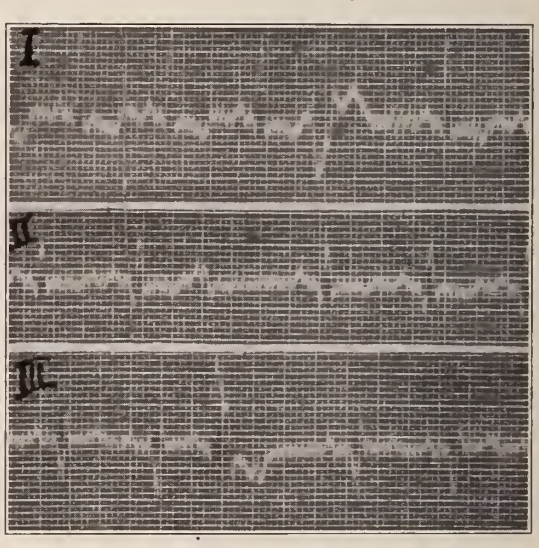


FIG. 2 (Case 2). The "coronary T" wave is present in Leads I and II, and premature ventricular beats are shown. Man, aged 62 years.

this experiment in hemodynamics was unintentionally but interestingly repeated. The patient felt vigorous one afternoon and helped to raise a ladder and then to pick several baskets of apples. Early the next morning he was found so dyspneic, cyanosed, and weak that the end seemed close at hand. The blood-pressure had risen to 180/120, the pulse to 120, with many premature beats. The patient had taken three grains of digitalis daily for several days, but in the emergency 7.5 grains in addition were given by mouth. Five hours later the man was found comfortable, his pink color had returned, the pulse had dropped to 92 and was entirely regular,

and the blood-pressure had fallen to 165/100. The next day he had regained his usual state of compensation and the blood pressure was 130/80. At the present time he is in West Virginia on a hunting trip, but with orders to sit down and wait for the rabbits to run by.

Comment and Conclusions.—In the first patient the opportunity was offered to study the effect of an acute lesion of the heart muscle on the blood-pressure. The factor of a lessened cardiac output in producing hypotension is apparent. When the injury following coronary thrombosis is extensive, the blood-pressure falls precipitately, collapse ensues, and death occurs immediately or in a few hours or days. With minimal myocardial damage, on the other hand, the patient may show at no time evidence of circulatory weakness. Between these extremes are frequent cases—and this is equally true of heart failure from many other causes—where careful observation and management decide the issue. I wish to emphasize the importance of rest and the avoidance of stimulation for the patient acutely ill with recent coronary occlusion. Elevation of temperature and persistently low blood-pressure indicate that the process of infarction is still active, and to permit exertion during this period, experience has taught me, is to invite catastrophe. Stimulation by digitalis is another means, it seems to me, of adding to the burden of the damaged muscle, and study of pathological material is convincing that tissue repair is best furthered by absolute rest.

The second patient is a clear-cut example of compensatory hypertension under the influence of the body's "master tissue" in the medulla. Partly because of insufficient blood supply from the arterial side, partly from venous stasis (Sahli), the vasoconstrictor center is demanding oxygen. Under such conditions the effectiveness of digitalis, both alone and with other means of relieving circulatory embarassment, was nothing short of miraculous. The conclusion is drawn that, even in the most desperate situations, rapid digitalization is worth a trial.

Tularaemia in Russia

Tularemia, a disease transmitted to humans by rabbits, has been found to exist in Asiatic Russia, whereas the disease hitherto has been known to exist only in the United States and Japan, the Public Health Service has recently announced.

MODERN CONCEPTION OF THE DIAGNOSIS AND TREATMENT OF EARLY SYPHILIS *

By F. F. SOWERS, B.S., M.D.
Fairmont, W. Va.

What is the modern conception of the diagnosis and treatment of early syphilis? Eighteen years ago the answer to such a question would have been no more or less than one blood Wasserman reaction for the diagnosis and one intravenous injection of arsphenamin (606) for the treatment. Within recent years, however, our knowledge has become so extensive concerning this disease that today such an answer as the above would be unpardonable. Nevertheless, it may be well said that the more extensive our knowledge the more we realize how much is yet to be known. Furthermore, the truths that we accept today may fade into the errors of tomorrow.

The following discussion is by no means complete, and only those factors which are believed to be of most practical value to the physician will be presented.

The spirocheta pallida, active as it is within the body, is destroyed by the weakest of antiseptics outside the body. It has also been demonstrated that the spirocheta pallida will perish immediately upon drying. The possibility of there being more than one strain of spirocheta pallida is clinically recognized by the fact that those patients who develop marked cutaneous symptoms rarely develop nervous manifestations, while patients with neurosyphilis seldom give a history of marked skin eruptions. This observation, though interesting, has not been definitely proven. On the other hand, the civilized white races show a definite increase of nervous syphilis over the uncivilized races. The American negro, who scarcely ever develops tabes dorsalis and paresis, will not infrequently develop aortitis and aneurysm.

The popular belief among clinicians that syphilis is a local affair until after the appearance of the chancre is not true. Neisser, in 1906-1909, demonstrated that syphilis is a systemic infection by obtaining the organism from the testes, bone-marrow, and spleen within forty-eight hours after inoculation of the rabbit. Therefore, syphilis is a general systemic infection days or even weeks before the appearance of the chancre. It may also be stated here that a

---

* Read before the Marion County Medical Society, Fairmont, West Virginia, October 30, 1928.

break or an abrasion is not necessary for entrance of the spirocheta pallida into the body, and this is especially true of the mucous membranes. It must be admitted, however, that an abrasion will favor the entrance of the organism. While chancre is usually the first visible manifestation of the disease, it must not be forgotten that quite a few authentic cases have been reported of syphilis without a chancre. Needle-prick inoculation is one definite means by which this may occur. Hence, the danger of operating upon untreated syphilitics and the possibility of acquiring syphilis without even the warning of a chancre. Every physician should bear in mind that a chancre may assume almost any conceivable size or form and may occur on any accessible portion of the body except the hair, teeth, and nails.

According to statistics it has been estimated that from seven to ten per cent of the population of the United States have syphilis. In New York City, from July to October, 1914, syphilis headed the list of reported cases of contagious disease. Osler has recently placed syphilis first among medical causes of death, outranking even pneumonia, which at one time he named the "Captain of the men of death." And the physician who fails to meet it, and meet it often, has only his lack of perception to blame.

Diagnosis.—The failure to diagnose the chancre not infrequently lies in a lack of suspicion along with the survival of the notion, and the continuance of teaching students that, in order for a lesion to be a chancre, it must present all those differential diagnostic signs that were described long before the discovery of the spirocheta pallida and the darkfield examination. This may easily be overcome, however, by adopting the rule that "There is no way to make a positive diagnosis of a chancre except by darkfield, local and blood Wasserman reactions." Thus, the diagnosis of the chancre becomes a laboratory and not a clinical problem. It is unwise to forget that from 60 to 65 per cent of all genital lesions are syphilitic, most of which can be confirmed by the darkfield .

In performing the darkfield examination, the examiner should at all times be on his guard for the presence of saprophytic spirochetes which may simulate the spirocheta pallida. Dirty lesions about the penis usually contain the spirocheta refringens, which, to the inexperienced, may be confused with the spriocheta pallida. Some of the mouth spirochetes resemble the spirocheta pallida closely enough to cause serious confusion; especially is this true of the spirocheta microdentium. The large, coarse, very actively motile spirochete of Vincent's angina could scarcely be confused with the spirocheta pallida. The spirocheta pallida, to the experienced eye, however, has certain definite characteristics which enable its distinction, namely, its peculiar brilliancy, regularity and rigidity. As seen under the darkfield it has the rigidity of a steel shaving and the brilliancy of a lamp filament (Stokes). The secret of the darkfield test, nevertheless, lies in avoiding these saprophytic spirochetes by thoroughly cleansing the surface and obtaining the specimen from the base of the lesion. In event this fails, a specimen obtained by aspiration of an adjacent lymph-node will not infrequently demonstrate the organism. The latter procedure has the additional advantage of excluding the possibility of saprophytic spirochetes. Do not be discouraged should the initial examination be negative, but repeat the darkfield daily for at least a week, treating the lesion by local application of normal saline. Keep in mind that the darkfield is at its best the first two to four weeks of the chancre. After this period the Wasserman becomes more prominent.

In regard to the positive Waserman, there are certain elements with which every physician should be acquainted in order to properly interpret the results. Craig and Nichols have shown that the ingestion of considerable amounts of alcoholic liquors within twenty-four hours before the test may inhibit a positive and render the serum negative to the Wasserman reaction. Bacterial contamination at the time of drawing the blood, or subsequently, will occasionally give a false positive result. Cotton fiber, if mixed with the serum, as from cotton plugs in test tubes, has been said to produce a false positive reaction. Unknown substances may be present, or develop on standing, which will destroy the complement and produce a false positive reaction. At least forty-eight hours should elapse between a general anesthesia and the drawing of blood for the Wasserman test. The following conditions may give a true non-specific positive blood Wassermanreaction: frambesia or yaws, tuberculosis, the acute exanthemata, leprosy, septicemic pneumonia, subacute bacterial endocarditis, relapsing fever, advanced malignant cachexia, malaria, pregnancy, pernicious anemia, diabetes, and systemic mycotic infections. Therefore, a diagnosis of syphilis should not be made upon the basis of one positive blood Wasserman reaction without other convincing evidence of the disease. The diagnostic value of the positive Wasserman reaction,

however, should not be lightly considered, and should the total of false positives go as high as two per cent the diagnostic efficiency would still be higher than the large proportion of medical tests. While it may be said that 2 per cent of the positive Wasserman reactions are not indicative of syphilis, it is safe to say that 40 per cent of syphilitics will show a negative Wasserman reaction. Consequently, a positive diagnosis of syphilis is at times comparatively easy, but to make a negative diagnosis of syphilis is one of the most difficult phases of medicine with which we have to deal.

In 1910 Gennerich called attention to the fact that the serum of a latent syphilitic which was negative could be reactivated and produce a positive reaction by the intravenous injection of arsphenamin. The confirmation of this procedure by Milian has led to what is now known as the provocative test.

The addition of the Kahn precipitation test as a means of diagnosing syphilis is one of the outstanding contributions to modern syphilology. Most observers have found the Kahn and the Wasserman tests to agree in practically 98 per cent of cases. Under the supervision of Dr. Fox, of the New York Skin and Cancer Hospital, I ran the Kahn parallel with the Wasserman and found 96 per cent agreement between the two tests, and the specificity was about equal for each test. To my mind, the one outstanding advantage of the Kahn test over the Wasserman is the simplicity of the former. With a reasonable amount of experience and equipment, this test may be made an office procedure. The Michigan, Missouri, and West Virginia state laboratories and the United States Naval Medical Service have recently adopted the Kahn as a routine in preference to the Wasserman test.

The early examination of the spinal fluid of all patients known to have, or who have had, syphilis, is our sole means of recognizing early involvement of the nervous system before any permanent damage has developed. It was conclusively shown as early as 1915 that early neurosyphilis could be recognized by spinal-fluid examination before the appearance of secondary manifestations.

The secondary lesions of syphilis vary to a considerable extent, and may simulate any number of skin eruptions. It has been said that syphilis is the "great imitator," and to this may be justly added the statement that syphilis is the "great relapser," for relapse may occur at any stage of the disease from chancre to paresis. Relapse in the first year of the disease is especially prone to occur about the genitalia and in the mouth. There are no rules-of-thumb in diagnosing secondary syphilis by the character or distribution of the lesions. Nevertheless, for all practical purposes it may be said that if vesicles constitute the essential part of an eruption it is not syphilis. A very important exception, however, is the bullous syphilid of infancy. The secondary manifestations of syphilis are not infrequently overlooked, due to the inconspicuous nature of the lesion. The wall-paper syphilid so commonly seen in the textbook is the exception and not the rule.

To say that the patient gave no history of a secondary eruption or even a primary lesion is without significance. As a conservative estimate it may be said that fifty per cent of late syphilitics can give no history of syphilis. Twenty per cent of patients found to have syphilis can give only a history of gonorrhea (Stokes). The number of positive histories for syphilis will vary with the tact of the diagnostician. The failure of the examiner who approaches with the question, "Have you had syphilis?" and the success of the more tactful examiner who will ask, "Have you ever had a sore on your privates?" is quite obvious. While history-taking is quite essential in some instances, a careful physical examination is indispensable.

The physical examination should be complete. The patient should be stripped and gone over carefully from head to foot. It is wise to take a second look at the genitalia, the perineum and anus, the palms and soles, and in the mouth. The examination should be performed under direct daylight and not by artificial light. The macular secondary syphilid is invisible half the time under artificial light. The value of the complete physical examination can not be overestimated, not only from a diagnostic standpoint but also as a guide to anti-syphilitic treatment.

Treatment.—In general, it may be said that the treatment of syphilis today resolves itself about four drugs: mercury, bismuth, iodids, and the arsenicals.

Mercury, which has stood the test of time for many years, may be administered by four methods: by mouth, by inunction, and by intramuscular and intravenous injection. The inunction, which is universally accepted to be the safest effective method of administering mercury, is the least used of the four methods. Contrary to the old belief, that mercury in the blood stream possessed a direct destructive effect upon the spirocheta pallida, it has recently been shown that the spirillicidal effect of mercury in the body is practically *nil*. On the other hand,

the action of mercury outside the body, in an aqueous solution, is a powerful spirillicide. It has been definitely demonstrated that, while an effective arsphenamin injection will cause the disappearance of organisms from surface lesions within 24 hours, the organism can be found for weeks following repeated injections of maximum doses of mercury. The value of mercury, which combines with the body proteins (like blood serum) and is rendered practically inert as a spirillicide, has its antisyphilitic effect as a direct stimulant to cellular resistance to the spirocheta pallida.

Bismuth, which came into use in 1922 and is gradually gaining ground as an antisyphilitic, while on the whole its action is more or less similar to that of mercury, has the advantage of being more spirillicidal than mercury. Fournieur reported the rapid spirillicidal effect on the spirocheta pallida in the chancre, the organism disappearing sometimes within one to two days after the first dose and always by the end of the third injection. Bismuth also has proven its value in treating certain Wasserman-fast cases, resistant infections, relapsers, and those patients showing an idiosyncrasy for mercury.

The administration of iodids in the treatment of syphilis has been largely confined to the late manifestations of the disease. While iodids have no spirillicidal effect and do not, like mercury, stimulate a specific cellular resistance, their effect on the tertiary syphilids is beyond question. Some authorities give iodids early in the disease. If iodids have a curative effect upon the late involvement of the disease, why, then, would not their early administration have a tendency to prevent such involvement?

In the treatment of syphilis the arsenicals are now considered indispensable. An effective arsphenamin will destroy the organism in all the surface lesions within 24 hours, thus rendering the patient harmless as far as his infection is concerned. The original arsphenamin, or "606," of Ehrlich, is today considered both clinically and experimentally to be the most effective therapeutically.

The value of the early diagnosis can only be appreciated by the response to early treatment. It has been said that "Syphilis is the most undertreated of all the known diseases." Some authorities contend that the disease is far more resistant to treatment today than it was in the first two or three years of the arsphenamin era, and that four courses of arsphenamin at the present time appear to accomplish but little more than four injections in the first two to three years of arsphenamin therapy. According to the best authorities, the minimum of modern treatment consists of three courses, each course consisting of eight to ten injections of arsphenamin and ten to twelve of mercury or bismuth. A modification of the Pollitzer system of treatment, in which at the outset arsphenamin is gvien daily in maximum doses for three days, then weekly, has proven to be very effective, the dominant idea in the treatment being the early, rapid and complete destruction of the causative organism. The first injection of arsphenamin should be small and should be given with caution. A thorough search for any contraindication to arsphenamin therapy should be made before the injection. Bad lungs, bad heart, bad kidneys, etc., are too frequently recognized, at the expense of the patient, after the injection. Not infrequently the contraindication is relative and treatment may be given by skillful management.

If a patient who has suffered a known exposure to infection not later than two days, a prophylactic treatment to abort the presumptive infection is in order. This treatment consists of three injections of arsphenamin on alternate days. For surgeons who prick their fingers while operating on Wasserman positive cases, two injections of neoarsphenamin on two successive days is advisable (Stokes). While the risk of needle-prick infection is small, it is possible and may occur without the warning of a chancre.

Once a chancre has developed, the patient should receive the maximum treatment. Moore and Kemp have demonstrated that there is a diminishing proportion of relapse with an increasing number of arsphenamin injections. In general, the more prolonged the treatment the less the likelihood of relapse. It has also been demonstrated that relapses are more frequent under neoarsphenamin than the original arsphenamin. Failure to select a highly potent remedy may be responsible for the later development of serious tertiary lesions in patients supposedly cured.

In 1914 a standard technique for the treatment of syphilis was proposed for the use of public health clinics. After a thorough discussion of the subject the following compromise was reached: A first course consisting of a spirillicidal series of three arsphenamin injections, .3, .4, 5. gm. "or its equivalent," in six days, is followed by weekly injections of .4 to .6 gm. to a total of eight injections. If the blood Wasserman test is positive after the eighth injection of the first course, the course is prolonged to ten or twelve injections. The second or third

courses of eight injections each are reinforced by a fourth course or even a fifth if the blood Wasserman reaction had been positive after the first course. The interval between arsphenamin courses is six weeks. Mercury is given by inunction or by intramuscular injection of a soluble salt in oil suspension or mercury salicylate in the intervals between arsphenamin courses. The question of rest periods from all treatment in the first year was compromised by permitting only very short rest periods, not to exceed two weeks. Mercury is to be used alternately with arsphenamin rather than simultaneously.

It may be said that, under such treatment as the above, 75 per cent of the cases will obtain "cure," as far as present knowledge takes us. It must be remembered, however, that cure is presumptive and relapse is always possible. In other words, there is no absolute test of cure. Therefore, if at the end of a rather severe course of treatment the patient shows no evidence of clinical or serological manifestations of the disease, instead of being dismissed as cured he should be put on parole with the understanding that he should be reëxamined once every six months for the first three to five years, and, if there be no evidence of recurrence, once every year thereafter, or sooner, should any signs of recurrence arise.

Agranulocytic Angina

The report of the case made by Herbert W. Dasse, Chicago (*Journal A. M. A.*, Dec. 1, 1928), resembles very much the case of agranulocytic angina first reported by Dr. Werner Schultz in 1922, in which there was a severe infection leading to death in a few days with an abrupt onset accompanied by chills, high fever, prostration, ulcerogangrenous stomatitis, and marked sore throat. There was a leukopenia of 5,000 with an absence of granulocytes. There was no lymphoid or splenic hyperplasia. Throat cultures gave an almost pure culture of Bacillus pyocyaneus. The severe anemia with reduction of platelets and a hemorrhagic tendency were not described by Dr. Schultz. Injections of living cultures of Bacillus pyocyaneus subcutaneously into guinea-pigs produced a slight reduction in the white blood count and always a relative reduction of the granulocytes from 68 per cent to 30 per cent. A local ulcer formed with a center of necrosis and a slight inflammatory border, which healed rapidly in about ten days when the blood count was about normal.

Surgical Treatment of Malignant Tumors of Bladder

Verne C. Hunt, Rochester, Minn. (*Journal A. M. A.*, Dec. 1, 1928), has reviewed 370 cases of graded epithelioma of the bladder in which operation was performed at the Mayo Clinic. The operations were all curative in purpose and the cases included those in which surgical diathermy was used, but did not include those in which only palliative operations were carried out. Hunt says that 95 per cent of the malignant lesions of the bladder are epitheliomas of varying degrees of malignancy, more than half being highly malignant (grades 3 or 4), irrespective of situation. The lesions of the base of the bladder tend toward a higher degree of malignancy than those of the lateral walls and dome. The mortality rate of surgical procedures is dependent on the site of the tumor, the magnitude of the operation, and, in lesions of the base of the bladder, on the method of disposing of the ureter. The mortality is lowest following the excision types of operation employed in the lateral walls and dome and highest in segmental resection for tumors of the base with reimplantation of the ureter, hardly a justifiable procedure. Division and ligation of the ureter has proved the best method when the ureter is involved in the lesion or in the operation for extensive operable tumors of the base. The study of these 370 cases has indicated that results are dependent on the situation of the tumor, its extent and its degree of malignancy. In general, irrespective of the size or situation of the tumor, approximately 65 per cent of the patients with malignant lesions graded 1 or 2 are living and well three years after operation, while of those having radical operations for lesions graded 3 or 4 approximately 35 per cent obtained equally good results. When the site of the growth is taken into consideration, the results of surgical treatment of tumors of the lateral walls and base are nearly twice as good as those of the base, the degree of malignancy being equal. Approximately 73 per cent of patients with tumors of the lateral walls or dome, graded 1 or 2, and 42 per cent with tumors graded 3 or 4, are living three or more years, while 50 per cent of patients with tumors in the base graded 1 or 2, and 25 per cent of patients with tumors graded 3 or 4 lived without recurrence for the same period. It is apparent that the merit of various surgical procedures and physical agents used in the treatment of malignant tumors of the bladder may be judged and accurate results of treatment ascertained only if cases are aralyzed in terms of pathology, degree of malignancy, site of the lesion, and extent of involvement.

ABSTRACTS

Radium in Carcinoma

"Malignancy of the Uterine Cervix and Its Treatment with Heavily Filtered, Multiple Centers of Radium: Use of New Applicator." Harold Swanberg (Quincy, Ill.), *Radiological Review*, 51: 107–123, March, 1929. — Swanberg shows quite conclusively that the surgical treatment of cervical carcinoma has been practically abandoned by the leading gynecologists of America and replaced by radiation therapy. He advocates the Regaud (Paris) technique as the best method for applying radium in this condition and describes it in detail. (Regaud is the associate of Mme. Curié and the director of the Radium Institute of the University of Paris.) The principles of the method are (1) proper preliminary treatment, (2) rigorous asepsis, (3) use of comparative small amounts of radium over a long period, applying the greatest possible dosage without injury to surrounding normal tissues, (4) employment of a number of radioactive centers distributed throughout the entire uterine canal and in the vagina, (5) use of heavy filtration with dense metals which permit only the deep penetrating gamma rays of radium to be emitted, thereby avoiding necrosis of the tissues, and (6) use of external radiation when the parametria is involved.

Swanberg has simplified the Regaud technique by the use of a long, adjustable, T-shaped, special gold applicator for radiating the entire uterine canal and cross-firing on the cervix. This is used in connection with the Kaplan colpostat, a device for placing heavily filtered radium in the lateral vaginal fornices. The advantages claimed for the new applicator are, first, that it provides a single, heavily filtered instrument for radiating the entire uterine canal and vaginal portion of cervix, thus reducing the number of applicators to two; second, graduated parts for adjusting applicator to fit various length uterine canals; third, offers fifty per cent greater filtration than the Regaud applicators; fourth, gives greater protection to the vagina, thus preventing fistula formation, and, fifth, much less expensive than applicators of platinum construction.

With the applicators the author uses, six radium centers with a total of 75 milligrams are used for 6,000 to 8,000 milligram hours in the average case.

Regaud's latest statistics show 72% of his patients living one year after radium treatment, in spite of the fact that 88% were inoperable when first treated. In addition, 26.7% of all cases are alive and free from cancer five to six years after the radium treatment. The author concludes with the following:

"We believe the results enumerated above are very encouraging, and that they can be approximated by the conscientious physician who is properly prepared to treat cervical cancer by radiation methods. They are obtained, it must be remembered, without any mortality resulting from the treatment, which can not be said of the surgical method. The outlook for the patient with cervical cancer has, therefore, been vastly improved by the introduction of radiation therapy. The simplicity and ease of application of radium in uterine malignancy makes radium therapy a part of the regular physician's armamentarium, which should do much to hold out hope to many women suffering from cancer who, heretofore, have been doomed to die because the means of aiding them was not sufficiently close at hand."

Synthalin and Neosynthalin in the Treatment of Diabetes

In a paper read before the Pennsylvania State Medical Association, October 4, 1928, by Garfield G. Duncan of Philadelphia, and published in the March, 1929, issue of the *Pennsylvania Medical Journal*, the author reports a series of 17 cases in which very satisfactory results were obtained. In mild cases he was unable to discontinue the use of insulin and increased the carbohydrate calories in the diet list. He cautions against overdosage of the drug and enumerates some of the toxic effects such as anorexia, abdominal distress and diarrhea, distaste for fats, and sometimes loss of weight.

The maximum adult dosage was 30 mg. daily, omitting every third day. Its beneficial effects are more marked in children with mild cases under conditions where insulin treatment can not be given properly. The chief points noted: A much greater latitude was permitted in the diet of mild diabetics requiring insulin; reduction of insulin requirements and sometimes its discontinuance where less than three daily doses were necessary; increased insulin requirement following overdosage. No benefit obtained in the treatment of serosa acidosis. He concludes by giving the impression that the discovery of the guanidin derivativas marks a definite advance in diabetic therapy.

The approximate dosage of 0.4 mg. per kg. of body weight t. d., omitting every third day, with

accurately weighed diet restricted in fats and relatively high in carbohydrates, has yielded gratifying results in dealing with mild diabetes, and adding that it is imperative to keep in mind the possibility of untoward effects following prolonged use. C. A. R.

Supplementary Relations Among Nutritive Values of Foods

H. C. Sherman (*American Medicine*, November, 1928) writes that milk is the most efficient of foods in supplementing the breadstuffs and other cereals in nutrition. Milk proteins supplement bread proteins, and milk is rich in calcium and other minerals, vitamin A and vitamin G, in which cereal foods are relatively poor. The dietary should be built around bread and milk, with emphasis next on fruits and vegetables for minerals and vitamins, then on eggs. An increased amount of milk, even in a dietary which is already adequate, "may result in a higher degree of health and longevity both through diminished susceptibility to infections (conspicuously of the respiratory system), and through inducing a superior nutritive condition with a consequent general enhancement of stamina."

Accessory Dietary—Essentials—Vitamins

George R. Cowgill, Ph.D., *American Medicine*, November, 1928.—The five vitamins, A, B, C, D, E, are discussed in relation to their importance in general nutrition. Despite the opinion sometimes expressed that the average American dietary is not deficient in vitamin B, the author believes, particularly in view of its demonstrable effects on marasmic babies and patients with gastrointestinal disorders forbidding the ingestion of large amounts of food, that it is safer to make sure of giving liberal amounts of this vitamin by administering it in concentrated form.

Diagnosis and Treatment of Ulcers of the Lesser Curvature of the Stomach

Dr. H. W. Carson, of England, states that chronic ulcer of the stomach, as it is most frequently seen by the surgeon, is confined to a small area of the stomach wall, occurring at or near the pylorus and along the lesser curvature. There is so far no generally accepted explanation of the causation of gastric ulcers. The tendency to recurrence after excision of an ulcer of the lesser curvature is a point in favor of the suggestion that the ulcer is not purely a local happening. Two types of ulcers are commonly seen. The usual one is a sharply cut ulcer with much induration, which has a tendency to penetrate through the stomach wall, but does not perforate into the peritoneal cavity because it causes a protective thickening of the gastrohepatic omentum which it seals off. Later on, the base of the ulcer may become adherent to the liver or pancreas. The other type of ulcer extends superficially rather than deeply, and tends to involve the posterior surface and sometimes the anterior surface of the stomach. Both these may give rise to the hour-glass stomach, a complication due to scar-tissue contraction. Ulcers may be multiple. Ulcers of the lesser curvature occur more often in men than in women during the 45–55 years. The history is rarely less than two years and generally more than five. The most important symptom is pain, situated high up in the epigastric angle and sometimes even retrosternally, which comes on about one and a half hours after food and is practically never relieved by taking food. At first the pain is intermittent, but the intervals become shorter and finally it is more or less constant. It is at this stage that a typical pain occurs about the level of the twelfth dorsal and the first lumbar vertebræ. The next prominent symptom is vomiting, of the irritation type, which is small in amount and consists of mucus and saliva. The third most constant symptom is loss of weight. Hematemesis is not at all uncommon. The appetite is good but the patient dares not satisfy his hunger because of the pain. The diagnosis is confirmed by a chemical investigation of the stomach contents before and after a test meal and x-ray examination after a barium meal, the latter being the more valuable. In this way, not only can the exact position of the ulcer be determined, but its degree of fixation, its attachment to the liver or pancreas, and the presence of such a complication as hour-glass stomach are plainly shown. The exact position of the ulcer is important, as it has a direct bearing upon treatment. Examination of the abdomen does not give much assistance, as the ulcer is high up and adherent. There are two complications of lesser curvature ulcers—hemorrhage and hour-glass stomach. He sums up his views on treatment as follows:

(1) Gastrojejunostomy is not a curative operation where the pylorus is unaffected.

(2) Excision by knife or cautery is often followed by recurrence and should not be done.

(3) Excision with gastrojejunostomy gives a fair measure of success, but may be more difficult to do and more trying to the patient. It should be confined to small, non-adherent ulcers.

(4) Sleeve resection is a good operation, but is practicable in only a small proportion of cases.

(5) An ulcer eroding the liver or pancreas should if possible be treated by partial gastrectomy.

(6) Jejunostomy or duodenal feeding may prove to be a valuable method of treating ulcers so high on the lesser curvature that direct attack is technically impossible.—*International Clinics*, December, 1927.

Pathology of Vesical Neoplasms

Paul W. Aschner, New York (*Journal A. M. A.*, Dec. 1, 1928), asserts that reliable information as to the nature of bladder tumors is obtainable by cystoscopic biopsy in 97 per cent of cases. The failures occur in multiple tumors and in papillomatosis. Prognosis can not be made from biopsy alone in cases of malignancy. A biopsy diagnosis of malignancy in a case simulating papilloma, as seen at cystoscopy and by its response to fulguration, is a signal for more radical therapy (radium or surgery) except in the debilitated patient. Bladder tumors may be classified in a manner harmonious with general tumor terminology and with clinical terminology. They are benign or malignant. Classification based on cell grading alone is not as practicable for clinical purposes, and prognosis on such basis does not coincide with the late results in this series of cases. The presence or absence of infiltration appears to be a more reliable guide to the gravity of the situation. The site of the malignant tumor determines its respectability and thus influences prognosis materially. If a biopsy diagnosis of carcinoma is made and the case is considered surgical, resection of the whole thickness of the bladder wall should be the procedure of choice. Failure to do so, even in the case of pedunculated tumors, has often resulted in recurrence. Stalk invasion and tumor cells in blood vessels at the base can not be detected by gross inspection. Before radical surgery of the bladder is undertaken, a biopsy should be made as other lesions may closely resemble neoplasm.

TUBERCULOSIS ABSTRACTS

Latent Tuberculosis in Children

Latent tuberculosis is tuberculosis unaccompanied by significant symptoms or by physical signs. Lesions temporarily latent in this sense invariably precede manifest disease.

The intracutaneous tuberculin test is especially valuable, for by this means sensitiveness to tuberculin can be measured so accurately that two successive tests can be compared. Studies made at the Henry Phipps Institute upon children of families in contact with open tuberculosis and observed over a period of four years showed that the tuberculin reaction would often aid in determining whether a lesion recognizable by x-ray was potentially progressive or already healed. An active tuberculin reaction in a child with a tuberculous lesion recognizable by x-ray examination is presumptive evidence that the lesion has not healed.

There is no essential distinction between latent infection shown by an isolated pulmonary nodule and that accompanied by obvious involvement of the tracheo-bronchial glands, for dissections of lungs show that a pulmonary focus is almost invariably found in association with a lesion of the tracheo-bronchial lymph glands. In most instances, lesions of these glands are seen in the x-ray picture because there is some deposition of calcium, but massive lesions are sometimes recognizable, even in the absence of calcification. In young children there may be, in association with lesions of the lymph glands, wide areas of soft infiltration evident in the peripheral lung field.

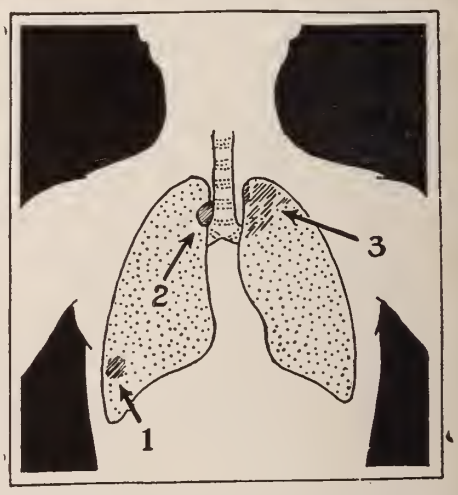


Diagram of lungs, showing how tuberculosis sometimes develops. 1. The first tubercle: 2. Lung gland which has been attacked by tubercle bacilli: 3. Disease of lung substance, which may spread to other parts of the lung. (*Illustration from booklet, "Do Children Have Tuberculosis?" designed to interest parents in latent tuberculosis.*)

Latent tuberculosis of the apex is of greater importance from the standpoint of prognosis than is disease of the tracheo-bronchial lymph glands. It is not infrequently seen in children of about 13 years of age; often in those who are examined as contacts. The lesions are usually indicated by "soft" mottling in the second and third interspaces, occasionally as low as the fourth interspace. The

character of these lesions as revealed by x-ray examination differed in no way from lesions found in another group of children where the obvious infiltration was accompanied by râles at one or both apices. The writer, by the way, does not accept the view that all tuberculosis, including the phthisis of adult life, has its origin in early infancy, although he believes that a good deal of the pulmonary tuberculosis of early adult life has its origin during adolescence.

Severe latent lesions are found most often in families in which some member is suffering from open tuberculosis, their frequency increasing with the duration of exposure. X-ray examination of young children in families exposed to tuberculosis will reveal the severer form of latent tuberculosis of the tracheo-bronchial lymph glands at a time when it is still unhealed, while routine examination of adolescent children exposed to open tuberculosis may also result in the discovery of latent apical lesions.

Lesions of the apex may remain latent for a long period before they are revealed by hemorrhage or other symptoms, and what is regarded as incipient tuberculosis of early adult life is often represented by a fibroid lesion which has had its origin during adolescence and has remained latent for a considerable period of years. The writer insists that no clear insight into the contagion of tuberculosis can be obtained unless latent disease is brought within the field of vision.—E. L. OPIE, *Amer. Rev. Tub.*, 1927, 16, 468.

The Diagnosis of Tracheo-bronchial Tuberculosis

For some seven years the writer has studied the question of radiography of the lungs, to determine what abnormal changes could be conclusively recognized. The subject was approached in two main directions—one to discover what elements of the lung structure might be differentiated by x-ray examination under the simplest conditions, and the other to provide against the effect of cardiovascular movement in disturbing lung detail.

The first of these questions was studied by radiographing the excised lung, and then comparing the specimen, area by area, with the radiogram. Some 400 pairs of lungs were thus examined, about 150 of which were maintained inflated during exposure. A study of this post-mortem material has convinced the author that calcium infiltration is the sole distinctive radiographic indication of the site of a lymph gland situated within the limits of the mediastinum. Calcium-free glands, however enlarged, fail to cause perceptible intensification of the mediastinal shadow. Intrapulmonary glands must contain calcium to be recorded radiographically. When they are large, that part of their calcium-free margins which projects beyond the arterial main stem will be recorded by contrast with the pulmonary parenchyma. Reabsorption of calcified caseous necrosis does not appear to occur. Shadows simulating calcification are thrown by vessels axially radiated.

Experience with physical signs in the diagnosis of tracheo-bronchial disease has been disappointing. Prolongation of the whispered voice downwards was common to the third, and sometimes to the fifth, dorsal spine; but the writer was unable to account for it on the basis suggested by d'Espine. Percussion was almost equally unsatisfactory, since there was no constant relation between apparent changes of percussion note and a demonstrable lesion. "It is not easy to understand how lesions other than the massive caseation of fatal infantile tuberculosis, which alone, apart from the malignant tumors, protrudes materially beyond the spinal margin, could supply an anatomic basis for changes in percussion. . . . Nor is there commonly a well-defined basis for those changes in percussion in the intercapsular region ascribed to changes in muscle tone."

No characteristic or definite group of symptoms could be recognized as due to tracheo-bronchial tuberculosis. Respiratory symptoms due to uncomplicated tracheo-bronchial disease do not occur.

Finally, the writer discusses the question of the quantitative tuberculin reaction, which he believes is important at those ages at which it is most desirable to recognize the presence, pathologic condition and significance of tracheo-bronchial tuberculosis. A marked reaction to 0.01 mg. of tuberculin (O. T.) in a child under 5 years is sufficient to warrant therapeutic and prophylactic measures, even in the absence of demonstrable lesions. "The presence of a recognizable lesion gravely emphasizes the danger, and rarely before the fifth year will the calcium shadow be other than fine and presumably labile. After the fifth year an intense reaction suggests an active lesion, especially if the calcium infiltration casts a soft shadow."

The diagnosis in the individual of tracheo-bronchial tuberculosis must rest on a demonstrable lesion, and "a definite symptom-complex can be discovered only by study of cases presenting such lesions."—F. M. MCPHEDRAN, *Amer. Jour. Med. Sciences*, 1927, 173, 245.

THE WEST VIRGINIA MEDICAL JOURNAL

JAMES R. BLOSS, *Editor-in-Chief* - - - - - - - - - Huntington

...ASSOCIATE EDITORS...

J. HOWARD ANDERSON, Marytown — WALTER E. VEST, Huntington — C. A. RAY, Charleston — HARRY M. HALL, Wheeling

THE JOURNAL issued on the first of each month. Entered as second-class matter January 1, 1926. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917. Authorized July 24, 1919.

Subscription to Members ..... $2.00 Per Year
Subscription to Non-Members ..... $3.50 Per Year
Single Copies ..... 50 Cents

OFFICERS

President:
H. M. HALL ..... Wheeling

First Vice-President:
B. F. BONE ..... Moundsville

Second Vice-President:
W. C. SWANN ..... Huntington

Third Vice-President:
J. A. DUFF ..... Martinsburg

Executive Secretary:
MR. JOE W. SAVAGE ..... Charleston

Treasurer:
T. MAXFIELD BARBER ..... Charleston

Delegates to A. M. A.:
JAMES R. BLOSS (1928-29) ..... Huntington
HENRI P. LINZ (1928) ..... Wheeling

Alternates:
A. A. SHAWKEY (1928-29) ..... Charleston
HARRY M. HALL (1928) ..... Wheeling

COUNCILLORS

Chairman of the Council for 1928:
R. H. DUNN ..... South Charleston

First District:
C. W. WADDELL (2-year term) ..... Fairmont
C. G. MORGAN (1-year term) ..... Moundsville

Second District:
C. H. MAXWELL (2-year term) ..... Morgantown
C. H. HALL (1-year term) ..... Elkins

Third District:
JOHN FOLK (2-year term) ..... Bridgeport
J. D. COLE (1-year term) ..... Clarksburg

Fourth District:
ROY BEN MILLER (2-year term) ..... Parkersburg
W. E. VEST (1-year term) ..... Huntington

Fifth District:
J. HOWARD ANDERSON (2-year term) ..... Marytown
H. G. STEELE (1-year term ..... Bluefield

Sixth District:
R. H. DUNN (2-year term) ..... South Charleston
H. A. WALKUP (1-year term) ..... Mt. Hope

¶ All original articles for THE JOURNAL must be made to it exclusively. Communications and items of general interest to the profession are invited from all parts of the state. Notices of deaths, removals from the state, changes of location, etc., are requested.

¶ Our readers are requested to send marked copies of local newspapers containing matters of interest to members of the medical profession. Name of sender should be given.

CONTRIBUTIONS TYPEWRITTEN

¶ Contract with present printer specifies all articles, communications, etc., MUST BE TYPED.

ADVERTISEMENTS

¶ Advertising forms will go to press not later than the tenth of each month. All advertisements must conform to the standard established by the Council of Pharmacy and Chemistry of the A. M. A.

WOMAN'S AUXILIARY

Mrs. R. V. Shanklin, Gary, President; Mrs. T. H. Harris, Parkersburg, vice-president; Mrs. W. C. Swann, Huntington, secretary; Mrs. W. D. Simmons, Slab Fork, treasurer.

Councillors

Mrs. C. G. Morgan, Moundsville, first district; Mrs. Ralph Maxwell, Morgantown, second district; Mrs. H. D. Price, Parkersburg, third district; Mrs. J. R. Bloss, Huntington, fourth district; Mrs. A. G. Rutherford, Welch, fifth district; Mrs. E. S. DePuy, Beckley, sixth district.

Delegates to Woman's Auxiliary of A. M. A.

Mrs. R. V. Shanklin, Gary; Mrs. B. S. Preston, Charleston. Alternates — Mrs. George Jeffers, Parkersburg; Mrs. W. B. Scherr, Morgantown.

STANDING COMMITTEES

Medical Defense Committee

C. G. Morgan, Moundsville, Chairman; H. A. Walkup, Mt. Hope; H. G. Steele, Bluefield.

Committee on Scientific Work

O. B. Biern, Huntington, chairman; G. H. Barksdale, Charleston; A. G. Rutherford, Welch.

Public Policy and Legislative Committee

R. A. Ireland, Charleston, chairman; R. H. Walker, Charleston; James McClung, Richwood; C. R. Ogden, Clarksburg, D. A. MacGregor, Wheeling.

Committee on Medical Education

John N. Simpson, Morgantown, chairman; W. T. Henshaw, Charleston; W. S. Fulton, Wheeling.

Committee on Professional Relations

John R. Shultz, Charleston, chairman, (5-year term); A. G. Rutherford, Welch, (2-year term); W. R. Goff, Parkersburg, (2-year term); Hugh G. Nicholson, Charleston, (3-year term); E. P. Smith, Fairmont, (4-year term)

Workman's Compensation Committee

W. A. MacMillan, Charleston, chairman; C. A. Ray, Charleston; John E. Cannaday, Charleston.

Committee on Public Health

David Littlejohn, Charleston, chairman; John Thames, Charleston; Will McLain, Wheeling.

Surgical Section

Robert King Buford, Charleston, chairman; B. I. Golden, Elkins.

Eye, Ear, Nose and Throat Section

I. D. Cole, Clarksburg, chairman; C. C. Jarvis, Clarksburg.

Hospital Association Officers

R. A. Ireland, Charleston, president; J. S. Turk, Wheeling, president-elect; B. I. Golden, Elkins, first vice-president; W. E. Vest, Huntington, second vice-president; Mr. Joe W. Savage, Charleston, secretary-treasurer.

PRESIDENT'S PAGE

THE legislature has come and gone. It is not our part to flatter ourselves, notwithstanding what was done—was well done and very successful. Let us repeat what has been said so often before. "Not a bill before that legislature would have affected our pocketbook." If we had ever been the least bit mercenary, not a hand would we have lifted against a single bill. We may get sophisticated; sometimes we may appear, to those who criticise us, as commercial; perhaps of necessity hardened or calloused, we see so much; but tradition in the end is too strong for us. In the end we are found working for the public good, well knowing gratitude and understanding will not be ours. If there is a finer prospect in modern yet practical idealism, we medical men are not aware of it. We speak not in vanity but in simplicity and, as we think, in fairness.

This legislature gave us no four-year medical school nor much of anything else we wanted. but it gave us more than it will ever know—the knowledge of our own strength when used in legitimate channels. We are so careless, so heedless, of our own rights. We have so many who often think, "What is the use?" Despite it all, it was amply and repeatedly demonstrated that, though few in numbers at the scene of action, when the Medical Association of the State of West Virginia is aroused and concentrates upon its principles and makes for action it will win, though at times the opposition seems well-nigh invulnerable and invincible. It was a great moral victory and one that should bind us together as never before.

In our every-day lives let us pause for a moment and thank our stars for the existence of several agencies who worked so hard. There are the legislative committee, Joseph Savage, Dr. Rankin, Dr. Tabor, and several men whose names will never be known, since that is as they prefer, but who are hereby thanked by the medical men of the state.

Harry M Hall

EDITORIAL

Membership

Two county societies have, at the time of this writing, surpassed or equalled their membership records of December 31, 1928. They are the Fayette County Medical Society and the Summers County Medical Society, both in the same district. Fayette county now has 55 paid-up members for 1929, the largest membership in the history of that society. Summers county has 11 paid-up members for 1929, or one more than was on their 1928 list. There is still one unpaid member of the Summers society and two unpaid members of the Fayette society.

Another society with an excellent membership record for this time of year is the Grant-Hampshire-Hardy-Mineral County Medical Society. This organization has 28 members and all but three of them are already in good standing for 1929. All of the larger county societies are in fine shape, with most of their 1929 dues already reported to the executive secretary.

The secretaries of almost all county societies have shown more interest this year than ever before, and the membership report for the Martinsburg meeting bids fair to be the best one in the history of the association.

Group Life Insurance

At the request of the insurance committee of the state association, we would like to call attention once more to the full page of information and data on page 4 of the advertising section of this journal. This page will give the status of the present plan for group life insurance to cover members of the West Virginia State Medical Association.

Again let us point out that the association is not in the insurance business, and that we do not want any member to apply for group insurance who does not sincerely want it. However, for those members who are really interested and who have not yet sent in their application blank, the insurance committee wishes to call their attention once more to the time limit.

Directory of Doctors

The new directory of physicians of the American Medical Association will be published and mailed out this year. This voluminous record will list, or attempt to list, every practitioner of medicine in the United States. Those members of the profession who are in good standing in their state and county societies will be listed in large-face type. All other doctors of medicine will be listed in small type.

In order that the names of the doctors in West Virginia shall properly appear in the new A. M. A. directory, it is necessary for all dues for 1929 to be paid and in the hands of the executive secretary at once. On the first day of April the names of all members who have not yet paid 1929 dues will be placed in the file of delinquents and will not be sent to the American Medical Association. These names will remain on the delinquent list until 1929 dues are remitted.

It might be well to further state that this is the last issue of the JOURNAL that will be mailed out to members who have not paid 1929 dues. Our second-class mailing rate with the post office department requires that we drop all unpaid subscribers after the first day of April each year.

If you have not paid your 1929 dues; if you want your name properly recorded in the A. M. A. directory, and if you want to continue to receive the JOURNAL, please take care of this matter at once.

The Value of Facts

The lay mind is ordinarily prone to think of facts in terms of figures and statistics. The lay mind ordinarily does not accept facts, unless those facts are brought home and substantiated in such a way as to turn the laugh upon all opposition. As a general rule, facts do not convince; but they do serve to break down opposition by the simple method of beating such opposition at its own game.

The value of facts was aptly illustrated on two different occasions at the recent session of the legislature. In both instances, facts were valuable not as a means of convincing the members of the legislature but as a means of throwing a "wet blanket" over the pseudo-facts presented by the leaders of a faction hostile to the medical profession.

The first incident took place in connection with a measure known as senate joint resolution No. 5, authorizing the state board of health to grant a license to D. B. Harman, of Riverton, Pendleton County, West Virginia, to practice medicine and surgery in this state. It was stirringly pointed out by the sponsor of this bill that Harman was a graduate of the medical college of the University of Wisconsin, that he served a territory comprising one-third of the entire area of Pendleton County, and that he had not had an opportunity to take the state board examination. An investigation revealed that

Harman was not a graduate from Wisconsin, that he did not serve one-third or even one-tenth of the area of Pendleton County, and that he had taken the state board examination and failed miserably. These facts were presented in the senate when the resolution came up for action and they made Harman's claims so ridiculous that the resolution was indefinitely postponed without further discussion.

The second incident took place in the house in connection with House Bill No. 18, known as the "Country Doctor" bill. The sponsor of this bill repeatedly claimed in the house that the average age of the country doctor in 1927 was 59 and that the average age in 1929 was 61. Nothing was offered to substantiate this claim, but it became almost a by-word among the delegates who were fighting for passage of the measure. When the bill came up for passage a motion was made to postpone it indefinitely and there were only five votes favorable to the medical profession. Dr. B. S. Rankin of Tunnelton, a member of the house, then made a speech stating that the average age of the country doctor was 51½ years. To substantiate his claim he presented the directory of the *American Medical Association*, he gave the number of country doctors in West Virginia, and he exhibited a column of adding machine figures eleven feet long to show that he had added the ages together and reached the average age by dividing the total. When a vote was taken a few minutes later there were 38 members of the house who voted against the bill. The same measure was killed in the senate the following day.

All of which goes to show that facts are useful only when they are substantiated and that they are much more useful in tearing down opposing claims than they are in building up the claims of the offense.

The Publisher's Responsibility

In the intensive and persistent fight that THE JOURNAL has carried on for nearly a quarter of a century against medical frauds, there has been stressed, time and again, the anachronism of punishing the medical faker while allowing to go unscathed the newspaper or magazine publisher that made it possible for the faker to function. It has been shown repeatedly that in many instances the publishers make more money out a swindle than do the exploiters of the swindle. Many years ago, before advertising was carried on to the extent that it is today, one of the most widely known makers of "patent medicines" said to his fellow members of the nostrum organization: "The twenty thousand newspapers of the United States make more money from advertising the proprietary medicines than do the proprietors of the medicines themselves." The postal authorities, in issuing fraud orders against medical frauds, have reported that in some instances the amount spent by quacks in advertising is considerably in excess of one-half their gross receipts.

These facts make clear the necessity of bringing home to the careless or crooked publisher the responsibility that he assumes in accepting advertisements for fraudulent schemes. Some months ago the Federal Trade Commission called a trade practice conference for the publishers of periodicals to consider ways and means of eliminating, as far as possible, fraudulent advertisements from newspapers and magazines. The commission, because of its investigations of frauds in various fields, realized the anomaly of the situation as it is at present. The conference was held in New York City on October 9 last. Representatives of six thousand publishers were present. As a result of the conference a resolution was adopted, to the effect that the National Better Business Bureau be made the machinery through which the publishing industry would police the periodical field. This agreement, reached by the periodical publishers, has just been accepted by the commission as an expression of the trade.

Readers of THE JOURNAL are fairly familiar with the work of the National Better Business Bureau and its affiliated local Better Business Bureaus. These organizations are probably the most potent influence extant for the elimination of fraud in advertising. In the medical field, the national and many of the local better business bureaus have long been in close cooperation with the Bureau of Investigation of the American Medical Association, and every better business bureau in the country receives, each week, advance pages from THE JOURNAL containing matter dealing with quackery as it affects the public.

The resolution adopted by the periodical industry also proposed that the National Better Business Bureau, operating in behalf of the advertising industry, report to the Federal Trade Commission any violations of the Trade Practice Conference rule.

While there are in the publishing field many magazines and newspapers that not only rigidly exclude fraudulent advertising but also reject a great

deal of advertising that, while not fraudulent, is open to criticism, there are other publishers whose only yardstick for the acceptance of advertising seems to be whether or not the advertisement will debar the publication from the United States mails. The conference just held and the results of that conference will, it is to be hoped, bring the latter group to a realization of their responsibilities.—*Jour. A. M. A.*, Dec. 1, 1928.

Fayette 100 Per Cent

In another column of this JOURNAL appears a news item stating that the Fayette County Medical Society is one of two component societies of the state that has surpassed last year's membership record. After the item was written, Fayette county cleaned up its entire roster and is the first society in the state to attain the 100 per cent mark. This record is especially commendable when it is considered that the membership of the Fayette society is scattered over a large area and that it totals more than fifty doctors.

The secretary of the Fayette society is Dr. H. A. Walkup, of Mount Hope, a councillor and past president of his county organization. Dr. M. C. Borman, of Montgomery, is president of the Fayette society. These two doctors, and the entire membership of their society, are to be congratulated upon their excellent record for 1929.

COUNTY SOCIETY NEWS

Fayette County

The Fayette County Medical Society met at Oak Hill on the evening of March 12, with Dr. M. C. Borman presiding. The State Department of Health, through Dr. H. H. Puckett, Fayette county health officer, offered to the members of the society diphtheria toxin-antitoxin for immunization of children of pre-school and school age. An extensive immunization program will be carried out in the cities and rural districts of the county, which will begin about May 1.

The scientific program consisted of a paper by Dr. C. Frazier, of Powellton, on "Delayed Labor." Dr. E. S. Hamilton, of Oak Hill, presented a paper on "Focal Infection with Illustrative Cases." Dr. J. M. Spinks, of Mount Hope, presented a case report of a child with pyloric stenosis. Forty-six per cent of the membership of the society was present.

H. A. WALKUP, Secretary.

McDowell County

The McDowell County Medical Society convened in the offices of Welch Hospital No. 1 on March 13, 1929, at the regular monthly meeting. The meeting was called to order by Dr. W. C. Hall in the absence of Dr. D. D. Hatfield, president. Those present were: Drs. Killey, Hall, Cochran, Camper, Peters, Stevens, Peck, Newkirk, Anderson, Rutherford, and Justo. The minutes of the last meeting were read by Dr. Rutherford and approved as read.

Dr. Newkirk presented an interesting case of eclampsia which he had treated conservatively with excellent results to mother and child. Dr. Peters presented a very unusual case of myelogenous leukemia in a blind man 46 years old.

The paper of the evening was presented by Dr. J. C. Killey, of Vivian, on "The Treatment of Pyelitis in Children." Dr. Killey gave a most concise and up-to-date presentation of the subject. He emphasized the fact that pyelitis is a very common occurrence in children and is always more or less accompanied by an inflammatory condition of the kidneys shown by the appearance of casts, albumen, and epithelium in the urine. Pyelitis, in most instances, is a self-limited disease which may disappear almost as rapidly as it appears. The usual sources are either hematogenous, or an ascending infection from the bladder, due, usually, to the colon bacillus or typhoid bacillus, and these cases soon clear up under rest in bed and routine medical treatment. The changing of the reaction of the urine by means of sodium bicarbonate and potassium citrate, and by urotropin and acid sodium phosphate every ten days or so, is very beneficial. He also went on to say that the type due to staphylococcus infection responds better to treatment if hexylresorcinol is used.

Drs. Cochran and Stevens opened the discussion of Dr. Killey's paper and stated that pyelitis seemed more prominent this year than usual, due, no doubt, as a sequelæ to influenza epidemic, especially when this is accompanied by a suppurative ear condition. Dr. Hall mentioned the use of helmatol. Dr. Rutherford pointed out that many cases were operated on for appendicitis when the correct diagnosis was pyelitis, which should have been detected by repeated examinations of the urine. Dr. Camper brought to the attention of those present that the pelvic lymphatics were a predominating source of infection. Dr. Anderson advised changing the reaction of the urine every 24 or 48 hours rather than at 10-day intervals.

Unfinished business: The application of Dr. J. W. Calvert, a graduate of the University of Indiana, 1927, was brought to the attention of the society, and he was elected a member. There being no other important matters brought to the attention of the society, the meeting adjourned at 10 o'clock.

A. G. RUTHERFORD, Secretary.

Barbour-Randolph-Tucker

The regular meeting of the Barbour-Randolph-Tucker County Medical Society was held on February 19, 1929, at the Hotel Tygart, Elkins. The attendance was fair.

Interesting papers were read by E. R. McIntosh, M.D., on "The Prophylactic Treatment of Aural Diseases," and by J. Fred Grimm, D.D.S., on "The Relation of Infections of the Mouth to Systemic Diseases." A general discussion followed these papers by those present.

Dr. J. C. Irons, secretary of the society for the past fifteen years, is spending the winter in Florida.

Dr. W. W. Golden, in company with Mrs. Golden, is spending the winter on a Mediterranean cruise.

B. I. GOLDEN, Secretary *pro tem.*

G.-H.-H.-M. Society

New officers of the Grant-Hardy-Hampshire-Mineral County Medical Society, elected at the November meeting, include Dr. R. W. Love, of Moorefield, president; Dr. J. B. Groves, of Petersburg, first vice-president; Dr. Paul R. Wilson, of Piedmont, second vice-president; Dr. E. B. Martin, of Romney, third vice-president, and Dr. O. V. Brooks, of Moorefield, fourth vice-president. Dr. T. C. Giffin, of Keyser, was reëlected as secretary-treasurer.

Delegates from the G.-H.-H.-M. society to the state meeting at Martinsburg next May will be Dr. Thomas G. Bess of Keyser, Dr. M. H. Maxwell of Keyser, and Dr. Giffin of Piedmont. The society decided that the alternate delegate list would be made up of any members of their organization present at the state meeting.

T. C. GIFFIN, Secretary.

Harrison County

The regular monthly meeting of the Harrison County Medical Society was held on the evening of February 7 with Dr. R. B. Bailey, of Wheeling, as the scientific essayist. He presented a very excellent paper on "The Surgical Treatment of Certain Forms of Pulmonary Tuberculosis." Discussion was opened by Dr. Wellingham, of the Hopemont Sanatorium.

At this meeting Dr. H. R. Sauder, of Wheeling, substituting for Dr. D. A. MacGregor, who was unable to be present as scheduled, gave an interesting talk based upon two cases observed by him which, upon first impression, appeared to be cardiac, but upon further study were found to be suffering from lesions remote from the heart, causing symptoms simulating heart disease. These gentlemen made very favorable impressions at this meeting.

At the March 7 meeting Dr. George F. Evans, of the Hopemont Sanatorium, read a very instructive paper upon "Tuberculosis in Children." Dr. C. H. Hall, of Elkins, also read an interesting paper upon "Calcium Chloride Intravenously in the Treatment of Tuberculosis." These papers were discussed by Dr. B. F. Shuttlesworth, Dr. John Folk, and others of the local society, and by Dr. W. S. Magill and Dr. R. S. Rpray of Morgantown.

B. S. BRAKE, Secretary.

Eastern Panhandle

The regular meeting of the Eastern Panhandle Medical Society was held in the Shenandoah Hotel at noon on Wednesday, March 13, 1929, the president, Dr. A. B. Engle, in the chair.

Following a chicken dinner, a program of more than usual interest was presented. The society was honored by the presence of the president of the State Medical Association, Dr. Harry M. Hall of Wheeling, who delivered a highly interesting address. Dr. Hall discussed at considerable length the subject, "State Medicine." He expressed himself as being opposed to its principles, and gave suggestions as to the methods of combating this menace. Dr. Hall spoke of various bills which had been introduced at the last session of the legislature. He mentioned that all bills which were considered detrimental to public welfare had been defeated.

Following the paper of Dr. Hall a motion picture, "How Biologicals Are Manufactured," was shown by courtesy of Parke, Davis & Company.

W. R. CAMERON, Secretary.

Summers County

An interesting and well-attended meeting of the Summers County Medical Society was held at the McCreery Hotel, Hinton, on the evening of March 20, 1929. The meeting followed a dinner served to the members present. Two new members were

taken into the society at this meeting, namely, Dr. F. L. Banks and Dr. A. P. Hudgkins, both of Hinton.

The election of officers for 1929 resulted in the selection of Dr. G. L. Pence, of Hinton, as president, and Dr. A. P. Hudgkins as secretary. Business matters included the adoption of a suggestion that each member of the society offer his services for examination of school children for tuberculosis, under the direction of the state health department. It was also decided to coöperate with the health department in administration of diphtheria toxin-antitoxin.

A. P. HUDGKINS, Secretary.

Tri-County Medical Society

The Tri-County Medical Society, composed of Monongalia, Marion, and Harrison counties, held a very interesting meeting at the Hotel Morgan, Morgantown, on the evening of February 28, with Dr. Ralph M. Tyson, of Jefferson Medical College, Philadelphia, as the scientific essayist. His subject was, "The Newborn Infant," and was discussed by many of the members present for the affair.

The meeting opened with a banquet served in the ballroom of the Morgan hotel, attended by the doctors and their wives. Dr. Tyson's paper was presented at 8 o'clock in the main dining room, and at the same hour the ladies' entertainment was furnished by the Woman's Auxiliary in the ballroom.

Upon adjournment of the two sessions, an informal dance was held in the ballroom of the Morgan, which was greatly enjoyed. The entertainment committee in charge of the affair was composed of Dr. C. C. Romine, Dr. L. W. Cobun, and Dr. Brinley John, all of Morgantown. The ladies in charge of the Auxiliary program and entertainment were Mrs. William B. Scherr, Mrs. G. R. Maxwell, Mrs. C. B. Wylie, Mrs. M. H. Brown, Mrs. David Hott, and Mrs. S. F. Talbott, all of Morgantown.

Brooke County

The regular bi-monthly meeting of the Brooke County Medical Society was held in the offices of the Brooke County Health Bureau on the evening of March 21. The address of the evening was given by Dr. Harry M. Hall, of Wheeling, president of the West Virginia State Medical Association, who took as his subject, "Some Problems of the Medical Profession." This talk was unusually interesting and brought forth considerable discussion from the members present.

Those who attended the March 21 session were: Drs. J. Arnold of Follansbee, Edgar Pell of Beech Bottom, J. W. Zemmer of Colliers, J. C. Schultz, J. P. McMullen, W. J. MacDonald, F. L. Matson, B. F. Harden, and W. T. Booher, all of Wellsburg. The next meeting of the society will be held on April 4.

W. J. MACDONALD, Secretary.

Monongalia County

Dr. R. A. D. Gillis, of Pittsburgh, Pa., was the scientific essayist at the March 5 meeting of the Monongalia County Medical Society, which was held in the Junior high school library at Morgantown. Dr. Gillis spoke on the subject, "Preserving the Pelvic Floor During Labor." This was a most interesting paper and was discussed by many of the members present at the meeting.

G. R. MAXWELL, Secretary.

Ohio County

Dr. Charles W. Wainwright, of Baltimore, Md., was the scientific essayist at the March 15 meeting of the Ohio County Medical Society, held at the Wheeling Elks' Club. His subject was, "Malta Fever in the United States." This was a most interesting paper and the discussion was opened by Dr. J. W. Gilmore and Dr. W. M. Sheppe, both of Wheeling.

H. W. BOND, Secretary.

Kanawha County

Dr. Harold W. Jones, of the Jefferson Medical College, Philadelphia, was the scientific essayist at the March 5 meeting of the Kanawha Medical Society, which was held in the Public Library auditorium in Charleston. Dr. Jones talked on the subject, "Diseases of the Blood," giving a comprehensive lecture concerning the treatment of blood disease in a general way and placing emphasis on the treatment of acute and secondary hemorrhage, splenic anemia, and pernicious anemia.

Dr. Jones' description of the Unger method of blood transfusion was well demonstrated by means of moving pictures, portraying an actual transfusion in progress. He stated that in his series of 5,000 transfusions he had used all known methods of transfusion and had chosen the Unger method as being the most satisfactory in every way.

Those who took part in the discussion of Dr. Jones paper were Dr. G. H. Barksdale, Dr. J. E. Cannaday, Dr. R. A. Ireland, Dr. Ted Summers, Dr. J. B. Banks, Dr. A. A. Shawkey, and Dr. T. M. Barber.

A number of business matters were taken up following the scientific program, including an audit of the records and accounts of the secretary, which was accepted. The society agreed to pay an amount not to exceed $200 with which to furnish one room of the state headquarters and to provide the sum of $10 per month to apply on the rent of this room. There were forty members of the society in attendance.

The March 19 meeting of the Kanawha Medical Society was called to order by the president, Dr. R. H. Walker. The scientific program was presented by Dr. R. A. Ireland and Dr. George W. Shriver, of Charleston, on the subject, "Discussion of the Electrocardiograph." A very instructive treatise of the electrocardiogram was given by these two doctors, which was followed by an active discussion by the members of the society.

At the conclusion of the scientific program, delegates to the state meeting at Martinsburg were elected as follows: Dr. Russel Kessel, Dr. R. A. Ireland, Dr. W. A. McMillan, Dr. E. Bennette Henson, Dr. W. P. Black, and Dr. G. H. Barksdale. Alternates elected were Dr. B. H. Swint, Dr. J. R. Shultz, Dr. G. G. Irwin, Dr. B. S. Preston, and Dr. Hugh G. Thompson.

A motion was made and passed that the president appoint a committee to formulate a history of the Kanawha Medical Society, same to be filed in the library of the West Virginia State Medical Association for permanent record. Dr. Walker stated that such a committee would be named and announced in the near future.

RUSSEL KESSEL, Secretary.

OBITUARY

D. E. Musgrave, M.D.

Word has just been received of the death of Dr. D. E. Musgrave, of Barboursville, who succumbed on March 16, 1929, at his home. Dr. Musgrave was a member of the Cabell County Medical Society and was well known throughout the southern part of West Virginia. He was born in 1869 and was graduated from the College of Physicians and Surgeons at Baltimore in 1902. The same year he was licensed to practice in this state, where he has since been located. The deceased had been a member of the state association for several years before his death.

Robert Evan Vickers, M.D.

Dr. Robert Evan Vickers, of Huntington, a member of the Cabell County Medical Society, died on February 27 of heart disease following a protracted illness. The deceased was 72 years of age and was a lifelong resident of West Virginia.

Dr. Vickers was born in Kanawha county in 1858 and was graduated from the Bellevue Hospital Medical College of New York in 1888. He entered upon the practice of medicine in this state the same year. Dr. Vickers had for many years been a member of the state association.

ANNOUNCEMENTS

Dr. Henson to Specialize

Dr. E. Bennette Henson, whose offices are located at 1102 Virginia street, Charleston, has limited his practice to injury and disease of bones and joints, according to a recent announcement. Dr. Henson was formerly engaged in general surgery.

Special Train

Having an unusually large membership, the Ohio State Medical Association has completed plans to charter one or more special cars for their members who will attend the American Medical Association meeting at Portland, Oregon, in July. With their usual grace, the officers of the Ohio society have invited the members of the West Virginia State Medical Association to share in their arrangement.

Members of the association in this state who expect to attend the A. M. A. meeting will, if interested in the plan of the Ohio society, communicate with Mr. Don K. Martin, executive secretary, Physicians' Building, 131 East State street, Columbus, Ohio.

German Baederkalander

The Cunard Line has received a supply of the German *Baederkalander*, a scientific reference book on German health resorts and sanataria—a book helpful to physicians and medical students going to Europe, especially to Germany. This booklet can be obtained *gratis* from The Cunard Line, 25 Broadway, New York.

Hotel Reservations

Hotel reservations should be made in advance by all members of the association who expect to attend the state meeting at Martinsburg. Such action will not only give the Martinsburg hotels an idea of what to expect, but will also give the committee of local doctors there advance warning in case of an overflow.

There are two good hotels in Martinsburg, both under the same management. The first is the Shenandoah, a modern and up-to-date hostelry which will serve as headquarters for the meeting. The second is the Berkley, somewhat old-fashioned but clean and well managed. Any and every member who expects to attend the state meeting should write in at once to one of these hotels for a reservation.

Will Reopen in May

The new Highland Sanitarium located at Martinsville, Indiana, sustained a severe fire loss a few days since; but fortunately all of the 75 or more patients were removed without injury. The buildings comprised three units, the two wings being new brick buildings, five stories high. The fire broke out in the center occupied by the old Sanitarium building, destroying it completely. The windows and interior of the new brick building were badly damaged, the loss amounting to $200,000.00. Dr. Simon P. Scherer, proprietor and medical director, announces to the medical profession that work has already begun on restoring both brick buildings which comprise an American plan hotel with sanitarium, baths and medical clinic, and he hopes to have the same in full operation again by May first. The original sanitarium building will not be rebuilt at this time. The two brick units will be operated as soon as the redecoration is completed.

Heart Disease Study

A committee of the Medical Society of the State of New York was appointed in 1926, to make a study of heart disease in the State of New York.

Their report contains charts and statistics showing mortality rates from heart disease in the state at large, United States registration area; heart diseases in the hospitals, and morbidity from heart diseases. One section is given over to a discussion of the Criteria for the Diagnosis and Classification of Heart Disease. Much valuable information is contained in this report. A copy has been sent to the library with the compliments of the American Heart Association.

LEGISLATION

How They Voted

A number of requests have been received at the executive offices of the Association from various individuals and county societies desiring to know how their delegates and senators voted on certain bills affecting the medical profession. There were many bills that were opposed by the Association and not one of them was ennacted into law. As a matter of fact, only three of these measures ever came to a vote. They were, respectively, the "Country Doctor" bill which passed the house and was killed in the senate, and the "Faith Healing" bill and the "Chiropractor" bill, which passed the senate and were killed in the house.

The delegates who voted in favor of the "Country Doctor" bill were: Bennett, Brammer, Brown (of Marion), Buzzerd, Caldwell, Calderwood, Carter, Chipley, Conley, Cooper, Crow, Cusack, Davis, Dean, Farnsworth, Fogle, Gallagher, Harper, Harvey, Keatley, Kennedy, Kidd, Massie, Matthews (of Fayette), Meredith (of Morgan), McColloch, McGlothlin, MacQueen, Payne, Peters, Poling, Prather, Radabaugh, Rairden, Bexroad, Riley, Sheppard, Smith (of Preston), Starkey, Ulrich, Vines and West—42.

Those who voted against the bill were: Baker, Bartlett, Beard, Beuhring, Cole, Fazenbaker, Fonner, Gay, Harmer, Hedges, Hill, Hiner, Hogg, Hull, Kyle, Lakin, Long, Luther, Martin, Mathews (of Kanawha), McIntire, McKenzie, Miss Radenbaugh, Raine, Rankin, Reed, Rice, Robinson, Robson, Scott, Stephens, Sutphin, Tabor, Talbott, Vandervort, White, Wyson and (Mr. Speaker) Mr. Cummings—38.

All others were absent and not voting.

Those who voted in favor of the "Faith Healing" bill in the senate were Senators Davis (of Lewis), Hallanan, Helmick, Hiner, Hutchinson, Lilly, Martin, Mathews, Miller, Reynolds, Roberts, Smith (of Marion), Smith (of Lincoln), Walker, White (of Wood), Wiseman, Woods and Woodyard—18.

Those who voted against this bill were Senators White(president) and Henshaw—2. Absent and not voting were Senators Abbot, Davis (of Ritchie), Engle, Herold, Hugus, Reitz, Robinson, Watkins, Wells and West.

Those who voted in favor of the Chiropractor bill were Senators White (president), Davis (of Lewis), Davis (of Ritchie), Hallanan, Helmick, Henshaw, Hiner, Hutchinson, Martin, Mathews, Miller, Reitz, Reynolds, Roberts, Smith (of Lincoln), Walker, Watkins, West, White (of Wood), and Woodyard—21.

Those voting against the Chiropractor bill were: Senators Abbot, Herold, Hugus, Robinson, Smith (of Marion), Wells and Wiseman—7.

Absent and not voting were Senators Engle and Lilly.

It should be borne in mind by the members of the association that the association was opposed vigorously to all three of the measures listed above. Those legislators who voted in favor of the bills were voting against the medical profession. Those legislators who voted against the bills were voting for the medical profession. All of this data will again be published in the Journal when the time comes to elect new members of the state legislature in 1931.

PUBLIC HEALTH

New Health Officer

Dr. Joseph F. Maxwell, formerly of Monmouth, Ill., assumed his duties as Raleigh County health officer on March 15, succeeding Dr. G. W. Luckey, who has held that position for the past several years. Dr. Maxwell recently attended a health officer's school at Greenville, O., and is especially trained in public health work. He was recently in Charleston conferring with officials of the state health department.

Child Health Clinic

A report of the child health conference held at Buffalo, Putnam County, on March 19 and 20, was brought back to Charleston by Dr. R. H. Paden and Mrs. W. W. Gadd of the state health department, who assisted at the clinic, which was sponsored by the Parent- Teacher Association.

The number of children examined was 131, including 93 school children and 38 preschool children.

Defects found were reported as follows:

Underweight, 65; overweight, 26; eyes, 28; ears, 5; teeth, 48; tonsils, 28; faulty mouth conditions, 7; suspicious lung condition, 3; enlarged glands, 6; and abnormal heart, two. The total number of defects was 212 and the number of children with defects 120.

Ninety-five per cent of the parents of the children were present at the examinations, which were made by Dr. S. H. Hayman, dentist, of Point Plesant; Dr. L. G. Stortz, oculist, Point Pleasant; Dr. Paden and Mrs. Gadd, assisted by Mesdames Gates, Brown, J. E. Crawford, Frazier, Wells and Mae Brown.

Ocular Fatigue

A report (Public Health Bulletin No. 181) of a study of the relationship of illumination to ocular efficiency and ocular fatigue among the letter separators in the Chicago post office, has recently been issued by Surgeon General H. S. Cumming of the U. S. Public Health Service.

This study was made in the main post office in Chicago from 1924 to 1926, in one the sections of the mailing division. The purposes of the study were (1) to determine the degree of illumination under which the distribution of mail might be done with the greatest ease and efficiency; and (2) to demonstrate ocular fatigue, if possible, and to determine its relation to different degrees of illumination; (3) to obtain any information that might add to the present knowledge of the relation of illumination to the conservation of vision.

Seventy-eight men were employed in the Wisconsin section in sorting mail, some working as day clerks and some as night clerks. General lighting was installed in the section, the intensity of the illumination under which the men worked was varied by steps from 2.74 to 10.72 foot-candles, and an investigation was made on the effect of the degree of illumination upon the speed of sorting mail. This was facilitated by the record kept by the post office of the amount of mail sorted daily by each man. Early in the investigation, however, it was found that not only the intensity of illumination but also the amount of mail to be sorted and the mental attitude of the worker affected the speed of sorting. Probably, as a result of the influence of these other factors, it was found that only for the sorting of small letter mail by the night shift, where there was a continuous and heavy supply of mail, could a marked relation be detected between degree of illumination and rate of sorting. In this case, in going from an illumination of 2.7 to 10.7 foot-candles there was found to be an increase of about eight per cent in the speed of sorting.

On account of the difficulty in obtaining definite results for the routine sorting of mail, it was decided early in the investigation to parallel the routine sorting of mail with tests on the sorting of 1,000 specially prepared cards under varying degrees of illumination, the "looking time," or the approximate time required to read the addresses on the cards, decreasing about eight per cent when the illumination was increased from 2.5 to 10 foot-candles.

In an attempt to find the effect of the degree of illumination upon ocular fatigue, a special piece of apparatus was designed in which a broken circle was exposed as a test object for 0.011 of a second, and the subject being examined was required to tell the direction of the break in the circle. This is believed to involve a special form of visual acuity, which might by analogy be called "snap acuity," since the time of exposure is so short that accommodation and fixation in this case are negligible. The subject was tested shortly after beginning work in the morning, and again shortly before stopping work in the afternoon. Snap acuity was found to be slightly lower at the close of the day's work than at the beginning, but no relation was observed between snap acuity and the degree of illumination under which the subject had been working. It was found, however, that snap acuity improved after the subjects had worked under high illumination for a sufficient length of time, and correspondingly decreased after working under low illumination. This phenomenon has never been observed before, and is very important if it can be confirmed.

Periodical examinations were made of the eyes of the men. They showed that the percentage of refractive errors among the clerks examined was rather large. Fifty per cent of them wore glasses. The percentages of other ocular defects found during the examinations seem to agree with those previously found by the United States Public Health Service and other investigators.

Tularemia in Sheep

A report recently made public by the United States Public Health Service points out the proved occurrence of tularemia in sheep in nature. This opens the question of the possibility of human infection from the handling of infected carcases. Infection is known to be definitely possible through the primary contamination of the hands with the tissue of crushed infected ticks held in the wool or with tick excrement which is commonly present in large masses. The fingers might also become contaminated by contact with the decayed tissue which sometimes develops at the points where infected ticks have been attached. The chance that infected meat might reach the market and be a source of danger to persons in slaughter-houses and packing houses and to the consuming public seems less likely, but can not be altogether dismissed, especially if animals are slaughtered for immediate local consumption.

Further studies with reference to tularemia in sheep caused by the wood tick are being considered. These studies will endeavor to determine (1) the extent to which it is concerned in wood-tick caused conditions, (2) to determine the geographical limits of the occurrence, which are wider than indicated by present data, (3) to secure more detailed epidemiological, symptomatological, and pathological data, and (4) to determine whether the meat of infected slaughtered sheep is a possible source of human infection.

Health Booklet

A West Virginia publication which is receiving both state and national recognition is a hundred page booklet gotten out by the State health Department. This booklet, the "Teacher's Manual of Health Education" by Edna M. Hardsaw, field advisory nurse of the State Health Department, was prepared with a view of aiding the teachers of West Virginia in the instruction of health principles and the detection of communicable diseases which so often interfere with the work of the schools.

Because of its scope and clearness this publication has received very favorable comment by educators both within and without the state. Dr. W. T. Henshaw has received a request for a hundred copies from the associate professor of health education of the Michigan state normal school at Ypsilanti, for use in the class room, the professor stating that after studing pamphlets on the subject from practically every state health department in the United States he considered the West Virginia publication by far the best single one.

The West Virginia Manual of Health Education is also being used in normal schools in Brazil, Porto Rico, South Africa and Mexico, as well as in all the normal schools in the state. It is supplied free on request to all teachers in the state.

This hundred page booklet covers the field of health education, beginning with the teacher's own health and giving information on school room sanitation, methods of control of communicable diseases,

health laws of the state, conduct of health examination and inspections, including an eye testing card with instructions for the use of the same, nutrition and suggested diets for school age children, together with plans for health clubs and songs and rhymes. It is the intention of this booklet to give the teacher, especially those in rural areas, who are working without the aid of a school health department or health official, an outline of practical methods for carrying on health inspections with a view of detecting obvious remedial physical defects which may be retarding the child in his school work and to encourage healthful environment in home, school and community.

Sanitary Courses

Sixteen colleges in the United States now offer either regular or optional courses in sanitary engineering, but there is considerable difference of opinion among the universities as to the fundamental concept of a sanitary engineering course, a survey made by I. W. Mendelsohn, associate sanitary engineer of the United States Public Health Service, discloses.

The results of the survey, made public on March 26, show that 19 colleges have given sanitary engineering courses, but that of these three had discontinued the course for various regular, distinct courses, that is, as part of the civil engineering curriculum, Mr. Mendelsohn stated.

"An interesting feature of this phase of the subject, and one which speaks a healthy development of the sanitary engineering profession, is the location of these colleges in every section of the country," he declared. The full text of the official summary follows:

1. There are 16 colleges in every section of the United States at present offering either regular or optional courses in sanitary engineering.

2. There is considerable difference of opinion among the universities as to the fundamental concept of a sanitary engineering course.

3. The sanitary engineering courses are in reality civil engineering courses with certain appended subjects, such as water supply, sewage disposal, the bacteriology and chemistry of water and sewage, and a little public health.

4. Emphasis in both sanitary engineering and public-health subjects reflects in practically all the institutions the personality of the professor of sanitary engineering.

5. The number of sanitary engineering graduates annually is increasing.

6. There is a great variation in the degrees granted by the institutions for equivalent work and also in the names of the course.

7. In four of the 16 institutions the term of the sanitary engineering course is either five or six years.

HOSPITAL NEWS

BUDGET CONTROL IN A SMALL HOSPITAL *

By CHARLES E. HOLZER, M.D.
Gallipolis, Ohio

I have felt just a little hesitancy in discussing this subject; first, because I am a surgeon and am not a system expert; then, too, both the plan of organization of The Holzer Hospital and our method of budget-keeping are just a little out of the beaten path. Perhaps, for that very reason, a description of our methods will be of interest to you.

I want to say in the beginning that our *per capita* cost is $6.78 per patient day, which is unusually high. However, in the three years that we have operated on a budget plan this cost has dropped from $7.41 to $6.78, despite the fact that we have improved our service in several respects.

While this paper is supposed to be a discussion of budgets rather than hospital organization, it seems necessary to give you a description of our institution and its plan of organization in order to explain our costs.

In the first place, all of our rooms are private. We have three rooms containing two beds each, but all other rooms are singles. We have no two classes of service. All of our patients are admitted as pay patients. Aside from myself and the business office, no one knows which are pay patients and which are charity patients. We make an attempt to collect something from each patient, but many are able to pay nothing.

As to the physical plant, we have almost three acres of lawn, all of which is landscaped and carefully kept—a feature which runs up our costs a bit. Our building is modern and of fireproof construction. A certain amount of money was spent for purposes of beauty alone, which made the per-bed cost a little high, it being around $4,000 per bed.

Regarding our professional organization, the hospital is charged direct with a portion of the salaries

* Read before the Hospital Association of West Virginia at Charleston on December 10, 1928.

of specialists in charge of the different departments. For instance, we have full-time men in charge of the Department of Internal Medicine, Pediatrics, Röntgenology, and Urology. These men divide their services between The Holzer Hospital and The Holzer Hospital Clinic. Completely equipped x-ray and clinical laboratories are maintained.

We operate our own school of nursing, and in this school we have set certain standards for the type of young woman whom we desire to train. We require a diploma from a Class A high school as an entrance requirement, and we operate our school on the eight-hour system. We find that, by making our entrance requirements high, and by offering a course which embraces certain supplementary subjects given by members of the faculty of Ohio University, fifty miles distant, besides the standard curriculum offered by the teaching staff of the training school, we not only have sufficient students to meet our enrollment requirements, but this last September, for instance, we chose from fifty or sixty applications the twenty who seemed best fitted for the work of nursing. To interest the right type of young women we have a director of training school extension who spends several weeks each spring in visiting the high schools in our territory and describing the opportunities offered the graduate nurse. A school of nursing conducted along these lines is, of course, expensive, but we feel that the results gained by having sufficient nurses of this type more than pay for the extra expense necessarily involved. Our present training school enrollment is 39, while our average daily census of patients is about 35, or a ratio of a little more than one student nurse to each patient.

It seems best to say a word here about the relation between the hospital and the clinic. One administration department handles the two, but the expenses are carefully kept separate. In our business department five young women do all of the record work of the hospital and clinic. This group includes an executive secretary, who has charge of the business matters of the hospital and of my own extra-professional interests, one bookkeeper, one ediphone operator and stenographer, one clinic clerk who acts as statistician in her spare time, and a telephone operator who does record work in her spare time.

Again I want to apologize for taking so much time in telling of our plan of organization, but this seemed necessary to explain what would otherwise appear as discrepancies.

I presume you are all familiar with the usual budget system. Budgets were first used in Government hospitals, and modeled after the practices of successful business organizations, then taken up by the large hospitals; but we venture to say that, even now, the hospitals of fifty beds and under which have a budget system and really use it are few in number. We feel that a budget is necessary and desirable for any institution, however small, but often the tendency is to make the budget so complex that we are buried under a mountain of figures which are not clearly understood by the department head, on whom, after all, the success of the plan finally rests.

The starting point in making a budget for a manufacturing concern is the estimated amount of production that may be expected in the ensuing year or budget period. In a hospital the starting point is the number of days of service that we expect to give. For the laboratory, the number of tests to be performed; in the dietary, the number of meals to be served, etc. We want to emphasize that the first essential, before any hospital, large or small, can establish a budget system, is that they have an adequate set of books from which they can study easily the performance of various departments.

In the operation of our own budget plan, the records of past performance are carefully studied preliminary to making up the budget, the ratio of increased work from year to year considered. We even chart the probable prosperity of the community. After this a figure is named which will probably represent the amount of service to be anticipated for a given department. Our hospitalization is growing about 12% a year. Expected income and expected expenses are made up in detail.

Under a classic budget system, department heads are limited to the sum finally arrived at, and are expected to cut their needs to fit the cloth. If new equipment is needed and not foreseen, it can not be purchased, because the funds will not be available. In our own case, we use our budget for a working guide, and solely for the elimination of waste. In the actual operation of our budget, I believe the difference between our system and most others is that we use the unit of cost for a working figure, instead of the total sum available. That is, each department is given a cash allotment, the sum allotted being arrived at by multiplying the estimated number of units of service by a certain unit cost. If a larger number of units of service have been given than anticipated, it is understood that the cash

expenditure will be increased, but the amount of the unit should not be increased unless there is an improvement in the quality of the service. To be sure, as a service grows busier the cost of the unit service will decrease, since there are certain overhead expenses who do not increase proportionately. In our own case, if a need develops which will better our service we do not refuse to spend the money, even if we exceed our budget allotment, provided the department head can prove the necessity and advisability of same.

The best results from a budget require that studies of performance be distributed to departments at least once a month. Then there must be regular meetings for the discussion of different phases.

As a part of this discussion, we are presenting herewith copies of our budget for October, 1928. To consider some of the different departmental costs, in the laboratory, for instance, it will be noted that the actual number of tests for the first ten months of 1928 was 6,652, while the estimated number was 6,660. The forecast in this case was almost exact. The unit allotment per test was 74 cents, the actual expenditure 68½ cents—a very satisfactory performance.

In the x-ray department, the estimated number of patients was 770, the actual number 835. The cost of running this department dropped a bit, as we would expect with a slightly increased amount of service given.

Administration, in our case, is very difficult to figure, inasmuch as many of my professional interests are closely connected with the hospital. While certain arbitrary distributions of some such items as long-distance calls are made, the factor of variation is great. The principal reason for the increase of administration over the allotment this year is that we changed our system of bookkeeping at the end of the first six months in 1928, which ran up quite a large bill for accountants' services.

Our heat, light and power is not high when we consider that the cubical contents of our building is 375,000 cubic feet, and yet in a building of this size we accommodate only fifty patients. A completely automatic ice plant, which was installed early in 1928, has increased our electric power bill over the estimate. Nevertheless, we feel that there is much electricity wasted and that this figure could be cut down.

Our laundry shows a slight decrease in the cost per pound of work. This would have been more marked but for the fact that our city water supply was changed from a 10- to a 17-gr. hardness early this year, and our water softeners do not completely remove the hardness, necessitating an increased amount of supplies.

Repairs equipment and repairs hospital are high. This is partly explained by the fact that we had a high-pressure boiler go bad, which we had figured to last another two years. We believe that we pay an unusual amount of attention to repairs. Department heads are asked to make a weekly report of all necessary repairs, and, in addition to this, a very careful general inspection of the building is made every second month. This scrupulous attention to repairs and cleaning keeps the building and physical equipment in good condition, and, while it runs up the *per capita* cost for repairs and maintenance, this adjusts itself in the lessened depreciation and more satisfactory service.

Our surgery and drugs is high because we spent $1,000 for tetanus antitoxin during the summer of 1928.

Our dietary allotment is a little lower than usual for hospitals, we believe. We have many labor-saving devices installed in our kitchens, and are able to serve an average of more than 200 meals a day with five people in the kitchen besides the student nurse. Early in 1928 it was arbitrarily decided to allow the dietition 10½ over the estimated budget for the improvement of this service, and, of course, the cost has not exceeded this increased allotment.

In conclusion, let me say that we feel that the advantage of a budget system, such as this, is that it is so easy to administer that no one feels the burden of it. It stimulates interest on the part of the different department heads. For instance, if the monthly budget report is a little late in being distributed, the department heads come around to the office and ask for same in order that they may check up on their performance for the past month. It seems to us that such a system as this is particularly adaptable to the small hospital, and that it much more than pays for the little time and trouble it takes to administer it.

Davis-Memorial Bulletin

The Davis-Memorial Hospital at Elkins has recently inaugurated a monthly bulletin in which is published the proceedings and papers presented at the staff meetings of that institution. The bulletin consists of four printed pages, single column, and

is published in Elkins. The bulletin was instituted by Dr. B. I. Golden, son of Dr. W. W. Golden, who is head of the hospital.

Three numbers of the bulletin have already been published and mailed out. They are primarily for the members of the staff of the Davis-Memorial Hospital. Interesting papers and case reports by Dr. Golden, Dr. R. J. Condry, Dr. S. G. Moore and Dr. L. J. Parmasano, D.D.S., have appeared. The Davis-Memorial Hospital is an institution of 54 beds.

Hospital Service in America

The hospital service, general and special, of the United States is much more extensive, in proportion to population, than in our own islands. Comparisons of efficiency would be difficult and unprofitable, but we know that the best American hospitals are, in essentials, as good as our own best, while in mechanical detail a few of them are even more advanced, chiefly because they are newer and have been able to adopt the latest ideals of construction and equipment. The existence of so many curative institutions of varying character and importance has long made it desirable that some kind of "statistical abstract" of them should be made available. This laborious task has just been compleed, for the time being, by the American Medical Association, which, through the Hospital Number of its *Journal*, has issued a complete list of all the hospitals which it recognizes. This list forms its first Hospital Register, and is so fully documented as to provide a model of what such a register should be. The outcome of the Association's inquiries is the admission to the Register of 6,807 hospitals and sanatoriums, and the exclusion of 462, containing over 11,000 beds. Good reasons are given for the exclusions; some of the institutions are deemed to be controlled by "persons known to be impostors and incapable, either morally or professionally, of providing efficient care for the sick or injured," some are suspected of exploiting quack cures for cancer, consumption and the like, others of permitting criminal or otherwise unethical practices to be carried on. The existence of institutions of doubtful reputation is the most conclusive justification, were any justification needed, for the preparation of a register of hospitals recognized by the medical profession in America. Their elimination is a duty which falls to the individual states afflicted by their presence. The geographical distribution of the American hospitals is necessarily very unequal, varying with the population. Thus while there are only ten general hospitals in Delaware, with a population only about that of Hammersmith, there are 323 in the state of New York, with a population midway between 11 and 12 millions. Roughly, two thirds of the hospitals registered are general hospitals, and their 345,000 beds contain an average of 228,000 patients. Next to them come the 503 institutions for nervous and mental cases, with 373,000 beds, a comparatively narrow margin of which are unoccupied. The figures of maternity hospitals are curiously unexpected. There are only 178 of them limited to maternity cases, with only 5,747 beds, and an average of 3,695 patients, a fall in number of 84 in the last five years. Thus, only about one tenth of the maternity work is done in the special hospitals. One the other hand, in the same period the number of hospitals used mainly for industrial patients has much more than doubled, though apparently in the most highly industrialized states what may be called the industrial hospitals are comparatively few. It is less surprising, in view of the developments of recent years, to find that the orthopedic hospitals have nearly doubled in number in the last half decade. The American Medical Association finds that there is an increasing tendency for "the government to assume functions heretofore belonging to volunteer agencies," but it should be explained that the word *government* is used to cover not only federal, but state and municipal institutions. In America religious bodies have always had a strong inclination to maintain hospitals of their own, and there are over 1,000 of the confessional institutions with 108,000 beds. It is, however, impossible to confine their benefits to members of the religious bodies concerned, the more especially since a fair amount of support is received from undenominational sources. It is instructive to find that of the 6,807 hospitals on the register, 2,091 now have physical therapy departments. In a country like America, divided into some fifty or so virtually independent states, federal action in regard to hospitals would be exceedingly difficult, if not impossible, and there is consequently all the more reason to be grateful for the admirable work done by the Medical Association, and for its bold and decided action in refusing admission to its register to any institution which fails to conform to elementary professional or moral standards. That action must lead eventually to the elimination of the unworthy.—*The Lancet* (London), April 28, 1928.

FROM OTHER JOURNALS

Cardiac Asthma

Acute paroxysmal dyspnea, often referred to as nocturnal dyspnea coming on, as it does, most frequently at night, but occasionally occurring after exertion, is a type of respiratory difficulty which is indicative of serious heart disease. Cardiac asthma is also a term applied to this particular cardio-respiratory dysfunction as well as acute suffocative pulmonary edema. The condition is characterized by a panting respiration, inability to lie prone, bubbling râles at times associated with cough, and frothy sputum. One of the outstanding features of cardiac asthma is the prompt relief attained by a full-sized dose of morphine given hypodermically.

Various hypotheses have been advanced to explain the genesis of this particular and peculiar type of dyspnea. It has been ascribed to a possible aortic reflex, to increased circulatory rate, to left ventricle failure, to left centricle failure with a shift in the body fluids from transudates or edema. Other theories have also been suggested. The general consensus of opinion seems to be that it is due to functional insufficiency of the left ventricle, or in the words of the older clinicians, left heart failure. Palmer and White have recently studied a group of 250 patients with cardiac asthma. They point out that the occurrence of paroxysmal dyspnea is of extremely grave prognostic significance. They suggest the left ventricle failure causes, with increased blood flow, a stasis of blood in the pulmonary circulatioon, so that the left ventricle is unable to take care of the blood sent on by the right ventricle. Blood accumulates in the pulmonary circuit. By reflex stimulation the asthmatic breathing is induced. The patient awakened by the difficult breathing, assumes an upright position and thus relieves the strain of the left ventricle. The morphine induces a reduction in the irritability of the respiratory center as well as ameliorating the nervous factor of the process, and thus in part aids the circulation by relieving nervous strain.—*New Orleans Medical and Surgical Journal.*

Free Services

When it comes to donating valuable services, without money and without price, the medical man registers one hundred per cent, says a writer in the *Indiana Medical Journal.* Every one else can charge for his services when it comes to welfare or uplift work, but the physician is expected to give his services, technical and valuable though they be, without hope of remuneration. This is all right if the health clinics and other welfare work requiring the services of a physician are for the indigent, but it is all wrong when the valuable services are rendered to those able to pay.

A well-known physician who was contributing a day of his busy life to a baby clinic, and getting nothing for it, was dumbfounded when he noted that a half dozen children from well-to-do families that he considered as his patrons were brought to the clinic for free service, and in addition were scheduled for free service at an operative clinic.

You hear some one say that health is a community asset that must be conserved, and it is up to the community to aid in the promotion of health. Granted! But clothing and food are necessary for the preservation of health, but do you see any clothing merchants donating clothing to cover naked children, or can you get any photographs of food merchants who are donating food for starving children? No! The benevolent and charitable organizations pay for clothing and food which they donate to the indigent and poor, but they do not expect to pay for any medical service, no matter how valuable such service may be.

Probably no reputable physician anywhere refuses to render professional aid to the indigent and poor, but he has a right to complain bitterly when his generosity and charity are imposed upon, and that is exactly what is going on every day in every populous community. There are too many so-called welfare organizations that are asking for gratuitous services from physicians, and it is time for the medical profession to insist that a good deal of this welfare work done by volunteer organizations should be in the hands of organized charity with the medical profession having a voice in the manner in which gratuitous medical services shall be rendered. —*Ohio State Medical Journal.*

Crinoline Strips

Plaster-of-paris bandages are often bought already made, but in many hospitals the bandages are made by hand. When the bandages are made by hand, crinoline strips and the bulk plaster are used.

These bandages are made by tearing the crinoline into strips of the desired width then uniformily spreading the plaster on these strips. It has been found that if about three threads are pulled from each side of the crinoline strip, the bandage is more easily handled when applied in making the cast.

The crinoline usually comes in large bolts and is rather awkward to handle. Our usual procedure, in making the strips, was to unroll the desired length, about 15 feet, and to have an assistant take the loose end and walk the length of the strip, until the crinoline is taut. Then I myself catch hold of the crinoline and exchange places with the assistant. As we continue to exchange places the crinoline is doubled upon itself and the bolt is soon unrolled into strips of the desired length. The ends are then cut, making single wide strips. These wide strips are snipped at widths of, generally 3, 5, 6, 8, 10 inches and are torn.

In this process of unrolling the crinoline, the bolt hops about and not only clutters up the whole room, but often-times wrinkles the crinoline. The manner in which I eliminate a great deal of this confusion is by using an ordinary irrigation or hypodermoclysis standard. I first remove the extension portion of the standard and place the entire bolt over the upright remaining part, thus making the standard act as a spindle. If the standard is light in weight I anchor one of the legs with a sand bag.

Then with the aid of an assistant we make the strips, by exchanging places as formerly described. We are able to do the work in about half the time and almost all stopping is eliminated.

A CONVENIENT REINFORCEMENT BOARD

When a single reinforcement board is used to make all the various lengths of plaster splints, it necessitates a length that is very bothersome and inconvenient to clean. I eliminate a great deal of this awkardness by cutting the board into halves and placing two or three small hinges on the underside. This enables the board to be doubled up when not in use or while being cleaned and by the shoulders pressing together makes a rigid board while in use. —*By E. T. Hier in Kansas Medical Journal.*

The Country Doctor

In a discussion of this question before the Vermont State Medical Society, Doctor Jenne says:

"The immediate need and urgent demand is for a medical service in smaller isolated towns that are without a physician or any service at all; for towns or communities so small that they cannot hope to command the service of a physician in their midst. If this town, coöperating with similarly situated and adjoining towns, would establish a modest little hospital of four or eight beds, designed to provide only such facilities as are provided by the better homes, it would make it physically possible for one physician to serve a community of sufficient numbers to maintain him in accordance with reasonable standards of living. Two or more nurses should be attached to such an institution, one of whom might well be trained for district nurse service.

"Each of the towns united in this manner could well afford granting a subsidy of a sufficient amount, which in the aggregate would make the undertaking attractive to a well qualified physician. The cost of medical service to such a community under this plan should not be greater than at present, and the service should be better. The inducement for a doctor to locate in such a place at the head of such a service would be greater. Many of his patients would be brought to him instead of his going to them; he could give better, therefore more satisfactory service, both to himself and to his patient; he could attend to the wants of a larger, even though more scattered clientele. This is to my mind the most promising solution to the problem of adequate medical service in the rural communities."

The establishment of the small hospital is one of the most important suggestions as a solution of the conditions in rural districts.—*J. N. Jenne, New Eng. Journ. Med.*, November 29, 1928, Vol. 199, p. 1102.

Sheppard-Towner-Newton

Dr. William C. Woodward, representing the American Medical Association (the national organization) and Dr. William D. Chapman appearing for the Illinois State Medical Society (the state organization) played a most prominent part during the hearing at Washington in opposition to the Newton Bill.

Other physicians who appeared as antagonists to the bill included Dr. George W. Kasmak, New York City, and Dr. Augustus Thorndyke, Boston.

Mrs. H. M. Amsden, Concord, N. H., voiced protest for the Woman's Auxiliary of the New Hampshire State Medical Association.

The part played by doctors and their official organizations in the defeat of the Newton Bill demand the gratitude of every citizen in the United States. Dr. Woodward was highly complimented by a member of the committee of Interstate and Foreign Commerce before which the hearing was held. We publish the compliment as follows:

House of Representatives, Washington, D. C.
My Dear Doctor Whalen:

Quite full hearings have been held on the Newton Bill, and I think that both sides were fairly well represented.

Dr. William C. Woodward, of Chicago, made a specially able presentation of the case against the bill, both from a medical and legal point of view. All the members of the committee acknowledged that, irrespective of their own views on the bill.

SCHUYLER MERRITT,
Member of the Committee.

It is well to remember that the defeat of the Newton Bill does not mean that the Sheppard-Towner Bill is no longer with us. As a matter of fact, the proponents are even now asking for a five-year extension of it.

Our one regret is that all forty-eight state medical societies were not officially represented in opposition at the hearing of the Newton Bill. —*Illinois Medical Journal.*

The Death Rate from Diabetes

Those who are acquainted with the remarkable results achieved by insulin in individual cases can not help wondering that its introduction into general practice should have made so little impression on the diabetes death rate. It is true that, like all innovations in medical practice, insulin has not been universally accepted and that it will probably be many years yet before it is promptly and effectively employed whenever diabetes does not yield to dietetic measures. There remains the undoubted fact that very many doctors are using insulin and getting results from its use, while the death rate from diabetes tends to rise rather than to diminish.

Some light is thrown on this puzzling situation by a statistical analysis published in the December *Bulletin of the Metropolitan Life Insurance Company of New York.* When the death rates are calculated for specific age groups and by sexes, it is found that definite changes have taken place since 1922, when insulin was introduced. Among males the diabetes death rate has declined steadily for all groups up to age 45. At ages 45-64 the rate has remained roughly as it was. For age 65 and over there is a definite increase. Among females the decline is limited to childhood and early adult life. "After age 55," says the report, "the increase has been practically uncontrolled."

This makes a great impression on the net death rate, since in the company's experience nearly half of the total deaths from diabetes occur in women over 50 years of age.

The general conclusion from these observations and other reports is that the incidence of diabetes, especially in women, is definitely on the increase. Insulin does not cure the disease, but does prolong life. Consequently, the gain from death in early life is offset by a loss in later years.—*International Medical Digest.*

Pay Clinics

The cost of sickness has increased in the last two decades out of proportion to the general increase in the cost of living. Never in the history of the world, however, has any country ever reached a high level of living comparable with that in America today. The automobile and radio have come to be considered such necessary equipment of the modern American family that they do not serve as obstacles to the tendering of free medical services to the owners.

The high cost of medical care is, nevertheless, a problem confronting the people today and is of vital interest to the profession. In an effort to solve it the committee headed by Dr. Ray Lyman Wilbur, President of Leland Stanford University, and composed of medical men for the most part, has laid out a five year program.

Most communities have for some time helped to solve the high cost of medical care, which is not entirely a new problem. The endowment and physical equipment (to say nothing of annual deficits) of many a hospital have been the gifts of wealthy citizens or the outcome of community campaigns. Few modern hospitals expect to do better than make expenses.

When, however, communities or "funds" begin to supply the services of physicians at cut rates in competition with private practice, it behooves the profession to express its disapproval in no uncertain terms. The pay clinic, so-called, as represented by the Cornell Clinic in New York City, is typical and has been the subject of debate in medical circles since its inception. New York is far enough away so that a pay clinic there can be mentioned with less danger of stirring up local animosity. Nevertheless medical activities right here in our own state by state, municipalities and beneficial associations are also good ties and beneficial associations are also good examples of unfair competition with general practice.

The Julius Rosenwald Fund with headquarters in Chicago is proposing to devote some of its funds to pay clinics or the like. An editorial in the December number of the *Illinois Medical Journal* came out frankly in opposition to the establishment of a pay clinic in Chicago on the ground that where a Fund or Foundation employs physicians and then furnishes services to the public for nominal fees it is competing with private physicians. "Ultimately the existence and development of such institutions will prove disastrous to medical practice, from the standpoint of the professional itself and of community welfare," this editorial avers. It really matters little whether the exchequer of a state or of a fund supports physicians in clinics which are cutting fees and competing with the profession at large. Mr. Michael Davis of the Rosenwald Fund is scheduled to address us at the Medical Economics meeting during the state convention and perhaps will be able to convince us of the desirability of Pay Clinics.

What other profession or business enterprise would sit complacently by and allow capital under the guise of philanthropy to deliberately interfere with private enterprise to the extent of offering their commodity to the public at less than the cost of production?—*Minnesota Medicine.*

Are Doctors "Necessaries of Life"?

The front page publicity recently given by one of Boston's newspapers to the subject of doctor's fees provides an opportunity for comment which the editors of this journal cannot let pass. The physicians of Arlington and Lexington, it appears, have agreed upon a schedule of fees; it is expressly stated that "such deductions may be made as charity may require and such additions as the peculiar circumstances of a case may justify." A resident of Lexington has taken exception to the rate table in question and has laid his complaint before the State Commission on Necessaries of Life. The commission, although admitting that medical services can hardly be included among the "commodities" referred to by the statute under which it functions, appears to be quite concerned over the situation and has referred the question to the secretary of the state board of registration in medicine. The commission reports furthermore that a complaint has been received regarding a similar fee table established by Haverhill physicians, and says that "an investigation will be made."

There seem to be two points at issue. First, have the members of the local medical profession the right to establish uniform rates? Second, are the rates so established unjust? The chairman of the commission on necessaries of life, in his letter to Secretary Vaughan of the board of registration, says:

"From my observations it seems that the public has always vigorously opposed price-fixing and monopolistic conditions, except where a benevolent monopoly exists, and this is probably the reason of much public clamor and demand for increasing governmental intervention into private business affected or thought to be affected by these conditions."

The article in which the above quotation appears concludes with this apparently inspired statement of the commission's attitude on this question:

"The commission feels, however, that the moral obligation on the part of physicians to a community will insure the cooperation of all persons in this profession in any investigation which may be undertaken. If the doctors in various municipalities are organizing for a purpose of controlling fees, the commission believes that the complete facts should be presented to the public. It further believes that public opinion will prevent situations which might be a reflection on the medical profession generally."

In our opinion the commission has gone off at half-cock. The chairman shows a lamentable ignorance of the fundamentals of medical practice when he implies that the establishment of a fee schedule is an attempt to hold up the public. He should realize that whether or not such a schedule has been officially endorsed, there has always been a tendency among the physicians of a community to charge approximately the same fee for similar services. The element of competitive bidding for practice by means of cutting prices has had no place in the economics of medicine, nor would it be desirable for this to be a factor in influencing the public in the choice of a physician. Such competition would lead to consequences almost as bad as those of fee splitting.

The implication that the physicians of Arlington and Lexington have entered into an agreement to "control fees" and to form a monopoly is so unjust as a merit a stern rebuke. The board of registration in medicine, to whom this problem, if there is one, properly belongs, has expressed the opinion that "there is nothing wrong in this action" (the establishment of a rate table). This board has the power

to investigate cases of alleged overcharging, and to suspend or revoke the licenses to practice of physicians found guilty of improper conduct.

We can see no possible objection to the establishment by the local profession of a schedule of fees; such a schedule exists tacitly anyway, and the adoption of a definite schedule simply means that representative medical men have discussed the matter and agreed upon a charge which seems to them just. Anyone who knows the type of man who is practicing medicine in Arlington, Lexington and Haverhill can believe nothing else.

As regard the second point of the particular fee table questtion—one who is conversant with the cost of medical education and the "overhead expenses" of a doctor who makes any effort to keep up with current progress will not find the charges excessive; it is to be remembered that the purchasing power of the dollar today is only 63 per cent of its purchasing power in 1914. No doctor expects that all of his patients can pay even on this basis, nor will he ask them to if their circumstances will not allow them to do so. Some sort of standard fee must be established, and the rates set forth in this schedule are those which must be charged in the majority of cases if a doctor would gather sufficient income to enable him to live as he is expected to live, to educate his children in a manner befitting the children of a member of a profession, and to keep his equipment, both mental and physical, in fit condition to meet the arduous demands of his professional activities.

It is probably a fact that the average visit of the plumber costs fully as much as the visit of the physician; the skilled laborer, earning from 60 to 70 dollars a week, makes at that rate from $3,000 to $3,500 a year. Surely the doctor, with his years spent in gaining his experience, his heavy responsibility and his constant attention to his practice, is entitled to at least three times that amount.

We freely acknowledge the responsibility of the physician to the public; his education is largely paid for by endownments and his training is acquired in public hospitals. BBut we maintain that no profession, has a more profund sense of its responsibility than has the medical profession, and we believe that the Commission on the Necessaries of Life, aside from exceeding its authority in this matter, has brought a most unjust and ill-advised accusation against the physicians of Massachusetts.—*New England Journal of Medicine.*

Recent Views on Medical Education

The Commission on Medical Education, composed of distinguished educators in many fields and of many leading medical men, has recently made available its third report. The report is devoted primarily to considerations of all the aspects of modern medical education. The commission feels that the trend of medical education has been to prolong greatly the period of preparation for the study of medicine, and that time can probably be saved by the reorganization and shortening of existing courses, by the reduction of time devoted to vacations and by more differentiation among students. Broader latitude is urged for requirements for entrance to medical schools; indeed, it is stated definitely that the specific medical school requirements should be confined to the fundamentals of biology, physics and chemistry. The specific suggestion is made that the various organizations interested in medical education permit certain colleges interested in pre-medical education to experiment with it without penalty to their students, in the hope of contributing to greater flexibility and variety in this phase of medical study. So far as teaching the basic medical sciences may be concerned, the most common criticisms have to do with the overcrowding of the curriculum, too much detail, too much emphasis on laboratory manipulation and technic, and a failure to correlate properly the work of various departments with clinical practice. These defects are to be corrected by emphasizing man as a living whole rather than as a group of separate organs and systems. More time must be provided for reading and thinking. Correlation of the fundamental sciences with clinical medicine may be brought about through effort by teachers of both divisions. In the teaching of clinical medicine, more emphasis is needed on preventive medicine. The unit of medical practice must be the patient, not the disease. The committee felt that state medical boards and other agencies concerned with licensure could help materially to correct present defects in medical training if they would confine their functions to the approval of medical schools and the general features of medical training and internship, and leave the details of the curriculum and clinical training to the medical school authorities. The chief general considerations in medical education seem to be the necessity for more electives in the curriculum, special emphasis on the technic of using current and reference literature, and the choice of actual clinicians for clinical teaching. It is urged that teachers of

clinical medicine should not be subject to any restrictions and regulations beyond those imposed on teachers in academic work so far as their university relationships are concerned. These are merely the high points of the report of the commission. It has given careful consideration to the problems in its field. Representing as it does a group of leaders who are intimately concerned in their daily work with medical practice, medical organization and medical teaching, the report merits the respect and study of every one interested in medical education. —*Jour. A. M. A.*, Dec. 1, 1928.

"A Ghastly Record"

Under the title, "A Ghastly Record," the Christian Science Parent Church, from its headquarters in London as well as in Washington, D. C., publishes a circular giving some of the statistics compiled from the official record of vital statistics of the town of Brookline, Mass., showing that 154 persons passed away at the Christian Science Sanitarium, located in Brookline, during the first five years of its existence. The list is not complete and probably for the reason, as intimated in the circular, that the Christian Science Sanitarium authorities have suppressed available information. As an indication of the deception that was practiced, the law was not followed in giving the name of the institution where the deaths occurred, for only the street number is given in a good many cases, just as the record would have been had the death occurred in a private residence. Evidently this was with the idea of creating the belief that deaths at the Christian Science institution are an exceedingly rare event. In other words, the Christian Science authorities concealed the real facts. It is announced that some of the deaths were real tragedies and others were as gruesome as could be imagined and yet sometimes while the patient was in a death struggle the sanitarium reporter that the patient was "healing" under the Christian Science ministrations. An interesting sidelight is the fact, furnished by the parent church, that while Brookline is the home of three medical hospitals of national reputation, yet all three of those hospitals do not have a combined death rate during five years equivalent to that occurring at the Christian Science Sanitarium. Facts are stubborn things to confront, and for the good of the public as well as suffering humanity, it is fortunate that some Christian Scientists are beginning to be honest with themselves as well as with the public.—*J. Indiana M. A.*, November, 1928.

Primary Carcinoma of the Lung

In touching upon this subject, the idea that it is a rare condition must be given up. Carcinoma is on the increase in America and abroad, and primary carcinoma of the lung is found at autopsy once in every 200 deaths from carcinoma, and is found once in every 200 autopsies upon adults. So it is not improbable that the idea of the rarity of the disease has been estimated by the failure in recognizing it in pulmonary cases in the fifth, sixth, and seventh decades of life.

It is probably wise for our readers to consider anew, if only in such a sketchy manner, certain leading or cardinal symptoms and signs. The list of symptoms of the disease may be wanting in any real individuality. There may be cough, pain in the chest ,a certain sort of sputum, dyspnea, cyanosis, dysphagia, stertor and effusion. In case of carcinoma of the mediastinum, there may be cough, pain in the chest, dyspnea, cyanosis, venous engorgement and edema of the upper part of the body, paralysis of the recurrent laryngeal nerve, hoarseness, inequality of the pupils, abdominal pain, dysphagia, and stertor. Certain general systemic signs are associated with this such as loss of weight, weakness, osteorthropathy, fever, chills, and anorexia. Further, association of symptoms due to metastasis may be noted as found in evidence of tthe involvement of the central nervous system, pain in the lower extremities, pain in the back, and abdominal pain. The findings of physical examination necessarily vary over a wide range. The stage and state of progress and complicating factors bring a varied assortment of signs by inspection, palpation, percussion and auscultation. The area of dullness, increasing progressively, marks the neoplastic mass in the more advanced cases. Naturally, lung parenchyma may emit signs that vary.

Weller's twelve cases form an interesting story in the description of primary carcinoma of the lung and can be read by practitioners with profit. Case one, presenting symptoms of coma, cyanosis and dyspnea, gave a pathologic diagnosis of stenosis, primary adeno-carcinoma of the right main bronchus, metastasis in bronchial lymph nodes and left kidney, acute stenosis of the trachea, partial stricture of the esophagus, chronic purulent fibroid pneumonia, bronchiectasis, emphysema, chronic leptomeningitis, atrophy with acute and chronic passive congestion of all organs. Case two displayed abdominal pain and much difficulty was experienced in arriving at a correct diagnosis. X-ray of the chest disclosed in-

creased density of the hilum and other foci. Case three displayed vomiting, abdominal pain, and loss of weight. In case four pain in the legs dominated the picture, In case five, engorgement of the superficial veins and hoarseness were the most striking signs. Case six showed mainly enlarged cervical nodes and weakness. Case seven complained of pain in the arms and chest, hoarseness, and showed pupillary inequality. Case eight gave a history of pain in the back and showed paralysis of the lower extremities. Case nine complained of pain in the feet and legs and was confused with aortic aneurism. Case ten gave out the following chief signs—cough, hemoptysis, dyspnea, fever and empyema. Case eleven complained of pain in the chest, productive cough, and weakness. Case twelve gave a clinical history chiefly of pain in legs. A rich array of symptoms and signs may be found as one peruses the interesting case reports, autopsy reports, and the records of the pathological diagnosis. To follow carefully this excellent presentation of the subject is to renew one's knowledge of the physical findings of these cases. Weller's paper should be read with interest.—*Reference: Annals of Internal Medicine, Virginia Medical Monthly*, February, 1929.

The Monocyte in Tuberculosis

Some time ago, in one of the popular science periodicals, appeared a description of the discovery by Dr. Florence Sabin of the presence in the blood of two kinds of cells, one of which fought on the side of microbes in tuberculosis, and the other in defense of the infected person. The report was the outcome of some years of study in the Department of Anatomy of the Johns Hopkins University upon types of blood cells.

During the past two years, a number of hospitals over the country have investigated the role of the two kinds of cells in the course of tuberculous disease. It is becoming apparent that an enumeration of them by the method of supravital staining can give information of importance in the diagnosis and prognosis of clinical tuberculosis. In 1925 appeared the study of Cunningham, Sabin, Sugiyama, and Kindwall,[1] of the Hopkins, upon the monocyte in the rabbit's blood after experimental infection with tuberculosis.

Since there are many healed cases of tuberculosis, the workers stated, the body must have a marked power to produce an immunity to this disease. Yet all attempts to develop an ammune serum to combat advancing cases have failed. They offered a new concept of tuberculosis, as a diease which affects primarily a single strain of cells, namely, the monocytes.

The monocyte had been previously identified[2] as a large (10-15 microns) round cells, with an oval or slightly indented nucleus, usually eccentric, with a ring of granules near the indentation of the nucleus making two o rthree concentric circles, the rosette. It differs from another mononuclear cell of Sabin's classification, the clasmatocyte, by the arrangement of granules in the rosette an dthe arrangement of its vacuoles. In fixed smears it is not differentiated. Blackfan and Diamond differ with this last belief to some extent. It is derived from the reticular cell, and from it in turn come the epithelioid cell and the giant cell which is characteristic of animal tubercles.

The living tubercle bacillus injected into the body enters the monocyte, and its immediate effect is an inhibition of the motility of the cell. The monocyte shows none of the signs toward the engulfed tubercle bacilli which ordinarily indicate that material taken in is being digested. Apparently the bacilli remain alive in the cell and capable of multiplication, harbored by the monocytes instead of being destroyed by them. The bacillus so alters the cytoplasmic activity of the monocyte that the cell becomes a suitable medium in which it can live and multiply. It becomes a parasite within the cell. The production of epithelioid and giant cells from the monocytes is then stimulated by its activity, and there is an overproduction of monocytes in the connective tissues and an increase in the blood during the acute phase of the disease.

In a study of the disease in rabbits the normal numbers of blood cells, after supravital staining, were determined. It was found that the ratio of monocytes to lymphocytes is constantly about one to three. The ratio changes in response to tuberculous infection. In their reaction to injections of living tubercle bacilli, the rabbits could be divided into three groups. In the first group, the normal ratio of monocytes to lymphocytes was reversed and the monocyte count rose very high. In these cases at autopsy, miliary tuberculosis or a more extreme grade of widespread infection was found. The animals showed a very low resistance to tuberculosis, and this could be foreold by the increasing number of monocytes in the peripheral circulation.

In the second group, a rise in the number of monocytes was noted, but the lymphocytes were

always higher. The monocyte-lymphocyte ratio remained low. The animals at autopsy showed either no tuberculosis or arrested tuberculosis. They had a high resistance to the disease.

In the third group, which contained much the largest number of animals, in the counts from day to day repeated shifting of the monocyte-lymphocyte ratio was found. In these animals attempts to build up a resistance alternated with periods of low resistance, with active and arrested phases of the disease. The periods of improvement in the blood picture, that is, of low monocyte count, corresponded with improvement in weight, and with other signs discernible at autopsy.

A very high monocyte count in the blood accompanied a malignant mononucleosis in the infected tissues. A moderately high monocyte count accompanied miliary tuberculosis and tissue mononucleosis of less intensity. A normal monocyte and high lymphocyte count were correlated with arrest of the disease. Pathologically, widely disseminated infected monocytes are found in the most severe lesions of tuberculosis. Surrounding of the tubercle by masses of lymphocytes is evidence that healing is taking place.[4]

That the same findings may be obtained from human blood has been elsewhere indicated. Rogers[3] studied a group of children with positive and negative tuberculin reactions in the New Haven Hospital. Young children were observed, known to have been exposed to tuberculosis, who gave a negative tuberculin reaction and showed a low monocyte-lymphocyte ratio. Clinically and from the blood findings these had a high resistance to tuberculosis. In other cases, an elevated monocyte-lymphocyte ratio, as in the rabbits, was accompanied by a low clinical resistance to tuberculosis. Modified monocytes, or epithelioid cells, were almost constantly present in the blood of cases of active tuberculosis, though they are not usually present in other common diseases or in healthy persons.

Blackfan and Diamond have likewise confirmed the possibility of clinical application of this method of blood examination in human tuberculosis. In their cases of progressive, rapidly fatal tuberculosis, the percentage and absolute number of monocytes rose steadily, the lymphocytes fell, the increased monocyte-lymphocyte ratio and the presence of epithelioid cells in the peripheral circulation meant active tuberculous infection. An increasing monocyte-lymphocyte ratio signified extension of the tuberculous process; a reversal of this ratio, healing. One case with a negative tuberculin reaction was diagnosed tuberculosis on the blood count, the monocyte-lymphocyte ratio being 1:1,2, or too high. Twelve days later, tubercle bacilli were found in sputum and feces, and death from tuberculosis ensued in one month. The workers emphasize the importance of supravital studies in tuberculous disease.

Thus one sees again confirmation of the resemblance of animal and human reaction to a specific infection.

Among the impediments to the general use of the method is the fact that the technique of staining is difficult. Rogers[3] says that his results for the first year were discarded for technical reasons. Also, monocyte increase occurs in occasional infectious conditions not due to the tubercle bacillus, and its failure to occur in a typical case of tuberculosis has been reported. The supravital staining methods as described will undoubtedly give additional understanding of the course of the disease and will probably assume a place of importance in diagnostic laboratories.—*Southern Medical Journal.*

REFERENCES

1. Cunningham, R. S., Sabin, F. R., Sugiyama, S., and Kindwall, J. A.: Role of the Monocyte in Tuberculosis. *Bull. Johns Hop. Hosp.*, 37:231, 1925.

2. Sabin, F. R.: Studies of Living Human Blood Cells. *Johns Hop. Hosp. Bull*, 34:277, 1923, quoted by 7.

3. Rogers, P. M.: Study of the Blood Monocyte in Children with Tuberculosis. *New Eng. Jour. Med.*, 198:740, 1928.

GENERAL NEWS

Martinsburg

Since state medical meetings have been established we judge there has always been some fault found with the place of meeting. We can distinctly recall that some of the members found it beyond them to make the trip to Wheeling the last time the meeting was held there, and the comment was about the same as it is in the case of Martinsburg—that it is "one of those panhandles so hard to reach." It must be remembered always—and it is very important to do so—that those in these panhandles find it just as inconvenient to get anywhere else, and yet they are, as a rule, good attendants.

It is quite an absurd idea, and we personally have no patience with it; yet, fantastic as it is, there are people in both these panhandles who would like to secede from the state, for, argue they, "We could get to Ohio or Pennsylvania or Virginia or Maryland more easily than we could to the capital of our own state, and could get to Philadelphia and back

almost while we are going to Bluefield by rail."

We never heard a doctor utter such nonsense, but we have heard objectors to the state prohibition law quite enthusiastically endorse the idea. We have merely mentioned it to bring home the fact that, to a good, loyal West Virginia doctor, wherever he is, geography does not count in his going to his state meeting. We made the trip to Bluefield the time the meeting was held there, and if it had been three times as far we would have counted the trouble and cost as trivial compared with the general good time we had—because we shall always remember the entertainment we enjoyed there as one of the best that we have ever had.

But if we had to sit in a pessimistic mood and count the distance and the cost, all that would have happened would have been that we would have missed one of the best times of our life. Which goes to show that, in these days when trips of a thousand miles provoke no comment at all, the doctor who allows the trip across his state to interfere with his attendance at the yearly conference does not, deep in his heart, want to go anywhere very badly.

Martinsburg is away out on the eastern panhandle, to be sure, but a man can leave here at six o'clock in the morning and step off there at 2:35 o'clock in the afternoon. He leaves for Charleston at 10:45 o'clock in the morning and arrives there at 7:50 o'clock that night. None of us in Wheeling thinks a thing of going to Charleston; why should we offer any axcuse for not going to Martinsburg—a shorter trip? Therefore, those men in Wheeling or any other place who mention time or distance simply will have to get another alibi.

We have just been to Martinsburg, and we are firmly convinced that those who go there are going to find it a very charming experience, full of pleasure and excitement. To begin with, they have as uniformly a good-looking and representative an aggregation of medical men as you will find anywhere in the country. While it sounds like we mean personal appearance alone, that is not the idea. They are alert, quick-moving, intelligent, and right up to the minute on their scientific and professional requirements. If they lean either way it is that they are a shade too sophisticated. They have as their president a man of quite a little distinction, for Dr. A. B. Eagle is a personality, and in saying this there is absolutely nothing of flattery directed toward a host who is about to entertain us. There are a lot of towns in West Virginia and elsewhere in the country who would be quite fortunate to have an Eagle. We reminded him that it almost suggested to us going into Rochester, Minnesota, and seeing the Mayos' hands in everything. In Martinsburg the influence of Dr. Eagle is to be seen in not a few of its enterprises, and it gave us quite a thrill to find one of our pet arguments so splendidly demonstrated when we say a medical man can be, when and if he so desires, not only a good physician and surgeon but a great business man as well. It sort of knocks out this time-worn argument that a doctor is a poor business man. Unless we are greatly mistaken, the man who can do so much for a town is going to elicit so much coöperation from his fellows—all of whom seem enthusiastic about him—that he is going to see that the May, 1929, meeting is one that will not soon be forgotten.

We shall say this to our colleagues throughout the state, that if they are in need of a spring tonic and have lost faith in their own medicine, they will do well to go to Martinsburg and meet Dr. Eagle. We can not tell when a personality so clearly inculcated enthusiasm into us. He has been a factor in making their apple festival what it is. He has helped to make the hotel a reality, "and so on and on, far into the night." To the conservative it might be argued whether it is the height of good taste to thus address a man within our ranks. Our rather narrow experience takes us so much into the ranks of men, most of whom are doing good work and letting it go at that, so when we meet a man with a "kick" we trust we will be pardoned for our enthusiasm. Of course, remarks like these put Dr. Eagle in a rather tight position, but, luckily, our opinion is that he never sees a tight position, but goes ahead and makes a success of whatever he tackles.

With him are a lot of seasoned men and a secretary, Dr. W. Ross Cameron, who is thoroughly competent and zealous, and it is up to our society to honor and uphold so capable a lot of physicians and surgeons.

The Shenandoah Hotel at Martinsburg is as good as you will find. If, wherever you go, you will always have a Shenandoah, you are likely to be satisfied. The meal served at the meeting would have done credit to New York City. It is true, the rooms are limited in number, but if the crowd is the same as that at Fairmont it should be taken care of at Martinsburg. However, it would be well to write in at once for reservations.

The Berkeley Hotel is rather old-fashioned and, to be candid, out of date. The operators of the Shenandoah have taken it over and it is taking on

new life. Any one who has done much touring in his automobile has often had to put up at such a hotel and probably never complained a bit. We had to do it a year or so ago in a very big city—it was the only hotel, too. They have many rooms. It has practically no lobby. The furniture is old and out of date, but the beds are clean, many rooms have a bath, and, unless you expect to spend your time in your room while in Martinsburg, you will experience absolutely no hardship at all in staying at this hotel. If you are of an economical turn of mind, you will find the Berkeley exactly the thing.

The roads out of Martinsburg are ideal, and no one thinks a thing of running twenty or thirty miles out. It is like going into the suburbs of a big city. Dr. Cameron told me that Dr. J. W. Duff had made the run to Washington twice in one day. It is seventy miles away. Now, this being so, and in case the Shenandoah is filled and you do not want to go to the Berkeley, Charles Town, but twelve miles away, has a hotel equal to the Shenandoah. At Winchester, twenty miles away, there is the George Washington, while Hagerstown, easy of access and not so far, has two hotels that are very good and a new, very fine one, just completed.

To those that desire golf, the medical men wish to say they have an ample golf course which they think will satisfy any tastes. The women are anxious that every doctor bring his wife and family. They are making no little preparation, and while we did not meet them personally, if they are as energetic as their husbands we have no doubt of their entertainment. We made careful inquiry as to the restaurants. The Shenandoah Coffee Room has handled four hundred persons and the main dining room is quite experienced in handling crowds.

There is not a road—and they are all good ones—leading from any of the main cities of West Virginia into Martinsburg that can not boast of some of the finest scenery in the United States. Not a doctor nor his family who would not enjoy the trip. The trip to Washington is as commonly accepted as is the one from Charleston to Huntington by the residents of those places. One can go to the Caverns and back in a day; by fast driving, to the Natural Bridge. White Sulhpur Springs is not a day's ride. Berkeley Springs is a very short drive, with the springs and swimming. Historic battlefields and monuments are everywhere. There could scarcely be a more entrancing spot from which to strike out for historical memories and beautiful landscapes.

We were one of those who accepted Martinsburg as one of the places entitled to a meeting. We can't say we were overenthused, simply because we did not know. When we went there and saw the preparations, became cognizant of the wonderful scenic and historical possibilities, its proximity to Washington, its hotel and nearby hostelries, and, above all, met the strong personalities and energetic men who compose its society, we felt an enthusiasm that was unbounded, and we are willing to hazard the guess that so will every other man—it makes no difference how far he comes.

We believe with a great faith that Martinsburg is going to do its part. The only question that remains to us is to ask this: Are the members of the West Virginia State Medical Association going to match it with an energetic and forceful big turn-out on their part?

H. M. H.

The State Program

The program for the state meeting at Martinsburg on May 21–23 is practically completed and will appear in full in the May issue of the JOURNAL. The committee on scientific work, headed by Dr. O. B. Biern of Huntington, has secured some of the most renowned men in the practice of medicine today for the Martinsburg meeting, which gives promise of being one of the best sessions ever held by the association.

Among the out-of-state speakers who will appear at Martinsburg are Dr. John Deaver of Philadelphia, Dr. Julius Friedenwald of Baltimore, Dr. Ralph Major of Kansas City, Dr. Joseph Collins of New York, Dr. Hugh Trout of Roanoke, Va., Dr. Cary Eggleston of New York, Dr. John H. Stokes of Philadelphia, and Dr. Haven Emerson of New York.

The session this year will be opened with the annual president's address and Dr. John Deaver will also appear on the program the same morning. Dr. Hugh Young will open with the oration on surgery at the afternoon session of the first day, and Dr. D. A. MacGregor, of Wheeling, will present the oration on medicine on the morning of the second day. In the past, the two orations and the address of the president were given on the opening evening of the convention. The first evening at Martinsburg will be given over to an address by Dr. Joseph Collins, and also to an obstetrical film which will be either rented or purchased for the purpose.

All of the sectional meetings will be held on the afternoon of the second day of the meeting, instead of the morning of the second day, as was formerly the custom. The committee felt that the sectional meetings would not overlap the general sessions if they were held in the afternoon.

Our Legislators

Dr. B. S. Rankin, of Kingwood, Preston county, and Dr. M. H. Tabor, of Crumpler, McDowell county, whose pictures appear on this page, deserve the undivided thanks of every ethical practitioner of medicine in West Virginia. These two members of the association, who served in the house of delegates at the recent session of the state legislature, were almost wholly responsible for the suppression of all of the vicious and dangerous bills aimed to break down the medical practice act.

Both Dr. Rankin and Dr. Tabor represent a type of medical man of which the association needs more. They were fearless and courageous in their fight and they saved the day on more than one occasion.

DR. B. S. RANKIN

Their constituents should be proud of them, and the association congratulates their constituents upon their wisdom in selecting these two representative

DR. M. H. TABOR

doctors. It is to be hoped that the profession will have more Dr. Rankins and Dr. Tabors at the legislative session in 1931.

New Books Received

Three new volumes on various phases of scientific medicine and surgery have recently been received from the C. V. Mosby Publishing Company, Inc., of St. Louis. The volumes are *The Injection Treatment of Internal Hemorrhoids*, by Marion C. Pruitt, M.D., of Emory University; *The Climacteric*, by Maranon, and *The Technique of Local Anesthesia*, by Hertzler. All three of these volumes will be reviewed in an early issue of the JOURNAL. They have been added to the already rapidly growing library of the state association.

Testimonials M.D.

A warning to the physician against letting himself be used as a catspaw by unscrupulous commercial interests was voiced by Dr. R. B. Morris at the recent annual meeting of the Bronx County Medical Economics Society in New York City.

Dr. Morris, who is secretary of the Medical Society of Western New York and resides in Olean, said that at present an ambitious attempt is being

made to place the doctors of the country on record as champions of cigarette-smoking.

"This attempt," he said, "is being carried on through the familiar questionnaire method. Thousands of doctors have been asked, not their opinion about cigarettes, but whether they themselves smoke cigarettes. They are urged to send in their answers unsigned.

"While this questionnaire does not bear the name of any commercial interest, there is no doubt in my mind that it is part of a skillful plan to promote cigarette-smoking, and it is easy to see how the returns from such a questionnaire may be used if they show anything like a preponderance of doctors using cigarettes, even if the total number of answers is too small to represent the real facts.

"Whether a doctor smokes or does not smoke has nothing to do with his opinion about the effect of cigarettes upon the women and children among his patients. At present the medical profession is concerned over a widespread attempt to increase the market for cigarettes among adolescents. This effort is skillfully linked with the current fad of dieting in order to maintain the fashionable feminine figure."

Periodic Examinations

Smallpox, diphtheria, typhoid fever, and the summer diarrheas of babies have been largely exterminated as the principal causes of death in the United States. But there is a steadily rising death rate from other causes—not from acute diseases but from insidious chronic conditions of whose beginnings the victims are unaware.

Chief among these are cancer, diseases of the heart and blood vessels, and chronic kidney diseases. Since there are no effective vaccines or sanitary measures to prevent these diseases, the chief method of controlling them is to detect them in their early stages. The means for discovering them lies in the periodic health examination.

North Carolina is the first state to create a unit of its board of health for the specific purpose of furthering periodic health examinations by the family physician, according to Dr. Frederick R. Taylor in *Hygeia*. This unit has a personnel of one doctor and one nurse, who visit county medical societies, parent-teacher associations, civic clubs, colleges, and ministers' associations to explain the value of such care.

In many cases, a direct cause for chronic diseases is found in the course of a health examination, such as bad teeth or tonsils. If the cause can not be ascertained, the life of the person can often be adjusted to avoid circumstances that aggravate the trouble. For instance, a person with mild heart disease can change the nature of his work and add years of comfortable existence to his life. This is too often impossible unless the trouble is found before it has advanced too far.

Mental Disturbances Following Operations For Cataract

It has been estimated that in from 2.5 to 3 per cent of all cases of cataract some mental disturbance develops following the operation. Allen Greenwood, Boston (*Journal A. M. A.*, Dec. 1, 1928), is firmly convinced, from his own experience, that operations on the eye involving a bandaging of both eyes are much more likely to be followed by varying degrees of mental imbalance than other surgical procedures under like conditions but without a blindfolding of the patient, especially in view of the fact that most cataract operations occur in those past middle life and often in the very old and feeble. The various degrees of mental instability may occur any time from a few hours after the operation to several days following. They most commonly occur on the first or second night after the cataract operation. The patient often wakes from a sound sleep in the middle of the night, is unable to place himself, becomes panic stricken, loses his mental balance, and becomes delirious or actively maniacal. The dressings may be torn off and the patient may leave his bed and even run out of the hospital in his night clothes, as has happened once in my experience. Sometimes the patient becomes simply demented and does not recognize the nurse, physician, or even friends. Occasionally dementia becomes permanent and the patient has to be confined in an institution for the insane. This deplorable outcome, however, is extremely rare, as the majority of patients with postoperative dementia, delirium or mania can be quickly cured, though occasionally not until serious injury has been done to the operated eye. The most important phase in the treatment of the condition lies in its prevention. Too much stress can not be laid on a study of the patient's mental condition prior to operation, and all efforts possible should be made to make this as good as possible up to the time of the operation and during its performance. He usually promises the patient good results to give all the courage possible. Quieting drugs followed by a thorough

and complete local anesthesia at the time of operation are the things most to be relied on. In some cases in which the patient is apparently on the verge of dementia prior to operation, a cataract operation conducted in the home of the patient is often the best insurance of a successful result. Preventative treatment after operation is of great value. No patient with cataract should ever be allowed to go through the first night after the operation without a nurse sitting beside the bed. Even ward patients should be given this protection, and the special nurse employed for this purpose should be strictly enjoined never to leave the patient's bedside without first calling somebody to her place of trust. It is quite necessary that the nurse or attendant who has this watchful position should be able to converse in the language understood by the patient. Pain after cataract operation is one of the factors in making a patient restless, and if the patient has been cautioned that undue movements may jeopardize the eye this restlessness may easily produce in the patient a condition of panic, so that no patient should be allowed to suffer pain following the operation. For the relief of pain and discomfort, Greenwood gives a hypodermic injection of 1/12 grain (6 mg.) of morphine with 1/200 grain (0.3 mg.) of scopolamine. This may be repeated two or three times during the night if necessary. If, in spite of all these painstaking prophylactic measures, a patient does become demented, delirious or maniacal, there is nothing so efficacious and often so promptly remedial as a removal of the bandage from the unoperated eye, particularly if the unoperated eye has sufficient vision for the patient to take in his surroundings and to see the face of the nurse or of some member of the family who has been called in. This accounts for the freedom from post-operative mental disturbances which has been previously noted in ambulatory cases in which only the operated eye was covered. Some of the later manifestations of mental disturbance may be warded off by allowing the patient to look with the operated eye on the third day and convincing him that he can see with it. This relieves his mind as to the ultimate outcome. It is extremely important that some efficacious protective dressing should be applied so that the patient can not in any way injure his own eye. Greenwood keeps the eye protected at all times when the patient is likely to fall asleep for at least three weeks after the operation, leaving the eye open and exposed only during the patient's waking hours and after the sixth day.

Chemists Extend Invitation

All members of the Kanawha Medical Society and of the West Virginia State Medical Association have been invited to attend a lecture which will be delivered in Charleston on the evening of April 27 by Dr. Roger Adams upon the subject, "Recent Progress of Chemistry in Medicine." Dr. Adams is head of the organic chemistry work at the University of Illinois, Urbana, Ill., and the lecture is being sponsored jointly by the West Virginia Academy of Science and the Kanawha Valley section of the Americal Chemical Society.

The work of Dr. Adams at the University of Illinois, especially in the treatment of leprosy, has made him a national figure and his lecture in Charleston is expected to attract considerable attention. The Kanawha Valley organization of chemists is especially anxious to interest the medical profession in this lecture, because the subject matter is so closely connected with the work of the profession.

The lecture will be preceded by a dinner in the Rotary room of the Kanawha Hotel, Charleston, which will be held at 6:30 o'clock on the evening of April 27. The lecture will be presented at 8 o'clock and will be followed by an informal reception in honor of Dr. Adams. The members of the medical profession are invited to attend both the dinner and the lecture, but must make reservations for the banquet on or before April 26. It has been pointed out that attendance at the dinner is not contingent upon attendance at the lecture by Dr. Adams.

Early Diagnosis Campaign

The Early Diagnosis campaign for tuberculosis in this state will be conducted during the entire month of April by the West Virginia Tuberculosis and Health Association, according to recent publicity released by Mr. George C. Rowell, executive secretary. Mr. Rowell reports that twenty-eight county agencies have ordered literature and posters amounting to nearly $500, and that additional supplies have been ordered by the state association to take care of the needs of other agencies that are expected to participate.

The 1929 campaign will feature lung gland tuberculosis and a set of lantern slides on the subject have been especially prepared for physicians. Also, a motion picture entitled, "Consequence," suitable to be shown at any theatre, has been procured for the lay public and will be shown extensively throughout the state during the campaign.

The first nation-wide effort to conduct an "Early Diagnosis" campaign was made in March, 1928, and proved unusually successful. The various state and local tuberculosis associations throughout the country will unite in April of this year in an educational campaign to impress upon the public the importance of early discovery of tuberculosis and the danger of neglect. The national association has prepared several million pieces of printed matter for distribution through its affiliated associations.

Every preparation for the success of the campaign in West Virginia has been completed by Mr. Rowell, who expects the effort this year will surpass the splendid campaign of 1928.

College of Physicians

The American College of Physicians will hold its thirteenth annual clinical session in Boston, April 8–12. Dr. Charles F. Martin, dean of the Faculty of Medicine, McGill University, is president of the College this year, and Dr. John H. Musser, professor of medicine at Tulane University Medical School, is president-elect and will be inducted to the presidency toward the end of the Boston meeting. Dr. James H. Means, Jackson professor of clinical medicine at Harvard Medical School and chief of the medical service at the Massachusetts General Hospital, is general chairman of all Boston committees having charge of arrangements for the clinical session of the College in April.

The program provides hospital visits, clinics, demonstrations and ward-walks during forenoons at fifteen different Boston hospitals, and for general scientific sessions each afternoon and evening in the assembly room of the Hotel Statler, which will be headquarters. Eminent authorities in their special lines will present the results of their work before an audience competent to appreciate the value of the contributions.

A symposium on deficiencies will take place the first evening of the session, and will be of particular interest because of the fact that deficiencies are nowadays assuming a far more widespread and important rôle than had heretofore been anticipated.

Another special feature is a review of the present status of vaccine and serum prophylaxis and therapy, designed to give the internist a rapid survey of the field. The speaker, Dr. Benjamin White, of Boston, is an authority on these subjects and can give the high spots in rapid and yet forceful fashion.

The annual banquet of the College will be held Thursday evening, April 11, when Dr. George E. Vincent, president of the Rockefeller Foundation, will deliver the chief address. The convocation, for the conferring of fellowships, will take place Friday evening, April 12. Dr. Charles F. Martin, of Montreal, will deliver the presidential address.

Programs and details concerning reduced fares, admission, etc., may be secured from the executive secretary, E. R. Loveland, 133-135 South 36th street, Philadelphia, Pa.

WOMAN'S AUXILIARY

Executive Board Meeting

The Executive Board of the Woman's Auxiliary to the West Virginia State Medical Association met in Huntington, West Virginia, on February 8th at 3:30 P. M., at the home of Mrs. Walter C. Swann. The meeting was called to order by the president, Mrs. R. V. Shanklin, with seven members present. Informal reports and short discussions on the problems of each of the standing committees were called for. No report on organization or educational programs, on account of the absence of the chairmen of these committees.

Mrs. T. M. Barber, the state editor of the Auxiliary, was absent, but a letter from Mr. Joe W. Savage, executive secretary of the West Virginia State Medical Association, was read by the president, stating changes made in the WEST VIRGINIA STATE MEDICAL JOURNAL, and offering the Auxiliary as much space as needed. Mrs. Shanklin asked each Auxiliary to send to Mrs. Barber all items of interest, both business and social.

On *Hygeia* a general discussion was held, but, in the absence of the chairman, Mrs. H. A. Whistler, no working plan was made. Mrs. W. C. Swann, secretary, had no report, but requested that the names and addresses of all officers and chairmen of standing committees of the county auxiliaries be sent in as soon as possible; also, that all dues for 1929 be sent in March 15. In the absence of the treasurer, Mrs. W. D. Simmons of Slab Fork, her report was read by the president. The same was accepted and placed on file. Mrs. S. J. Klumpp, parliamentarian, had no report.

The advisability of forming three new committees was explained by the president, followed by discussion. First of these, a committee on historical collection (to be duplicated by the county organizations), for the collection of data pertaining to the local medical society and auxiliaries. Material suggested to collect: Old papers, books, magazines,

pictures (from wood cuts to oil paintings), surgical instruments, cases, etc. Also, names and stories of old physicians, etc. Any interesting information relating to the medical profession and auxiliary. These to be collected by the county organizations and sent to the state, such as are deemed valuable for historical reasons. In connection with this work, that each auxiliary, county and state, have a scrapbook of information, newspaper and magazine clippings, pictures, etc., of interest to the auxiliary. The Southern Medical Auxiliary especially advocates this committee and has offered a prize to the state sending in the most complete scrapbook.

Second, the advisability of forming an advisory board, to be composed of three doctors, members of the Medical Association; these to be appointed by the president of the West Virginia State Medical Association, to act in an advisory capacity for the Woman's Auxiliary. Both suggested committees are advocated by the Auxiliary to the American Medical and the Southern Medical auxiliaries. Definite action on these will be taken at the annual meeting.

The third committee suggested—publicity—for the present to act in connection with the annual meeting.

Plans were discussed for the state meeting in Martinsburg, West Virginia, May 21–23. A tentative program was read by the president. The meeting adjourned, and tea was served to the visiting ladies and to the officers of Cabell County Auxiliary by Mrs. S. J. Klumpp and Mrs. W. C. Swann.

The following members of the board were present: Mrs. R. V. Shanklin, Mrs. J. P. Lilly, Mrs. V. T. Churchman, Jr., Mrs. A. L. Carson, Mrs. H. G. Camper, Mrs. S. J. Klumpp, Mrs. Walter C. Swann.

Mrs. W. C. Swann, Secretary.

Kanawha County

Few events of a similar nature have been in every detail so delightful as the St. Patrick tea, given on March 15 from four until five o'clock by the auxiliary of the Kanawha Medical Society at the home of Mrs. B. S. Preston, 1300 Virginia street, Charleston. The affair was given in honor of the new officers and members of the society, and those who attended during the hour were wives and daughters of medical men.

The organization has been in existence for about three years and is becoming quite prominent socially.

The Preston home, which lends itself most advantageously for a small affair of this kind, was decorated in a color scheme of green.

The guests were met at the door by little Miss Elizabeth Churchman, who took the cards in a small basket. She was dressed in green and white tissue paper. At the door was Mrs. M. L. Dillon, who wore a gray georgette dress. Mrs. B. S. Preston greeted the guests and introduced them to the president of the organization, who was first in the receiving line. The receiving line was composed of Mrs. V. T. Churchman, Jr., president; Mrs. Ira P. Champe, vice-president; Mrs. M. F. Peterson, secretary, and Mrs. H. R. Glass, treasurer. Informal afternoon gowns were worn by those in the receiving line.

Mrs. W. S. Shepherd invited the guests into the dining room, where a delightful lunch was served, composed of tea, green sandwiches cut in the shape of a shamrock, and rolled sandwiches tied with a small green ribbon. Nuts and shamrock-green candies were also served.

Mrs. C. A. Ray, who wore tan georgette trimmed in tan lace, poured tea. The table was attractive with a lace cover and four tall, green tapers in silver candlesticks. In the center of the table was a silver basket filled with green freesias and maiden hair ferns.

Assisting in the dining room were: Mrs. Hugh Thompson, Mrs. E. Bennette Henson, Mrs. Victor Knopp, Mrs. W. S. Work, Mrs. M. I. Mendeloff.

In the hall, frozen green punch was served by Mrs. W. A. Thornhill, who wore a dress of green chiffon. She was assisted by Miss Betty Preston, who was dressed in green taffeta with a green tulle skirt.

Among the guests who were received during the afternoon were: Mrs. Mary McGee, Mrs. J. B. Houston, Mrs. O. H. Bobbitt, Mrs. Preston Champe, Mrs. Clark Pool, Mrs. John E. Cannady, Mrs. Ray Kessel, Mrs. Russel Kessel, Mrs. J. W. Moore, Mrs. I. J. Ford, Mrs. B. W. Swint, Mrs. Maxfield, Mrs. E. B. Stephenson, Mrs. C. E. Copeland, Mrs. C. M. Rucker, Mrs. R. K. Burford, Mrs. Lawrence Petty, Mrs. Ross Dodson, Mrs. J. A. Roberts, Mrs. J. U. Rohr, Mrs. W. F. Shirkey, Jr., Mrs. Max Goldman, Mrs. John Thames, Mrs. Morris of Morgantown, Miss Mabel Fuller, Miss Corobitt, Miss Anna Bessler, Miss Dove White, Miss Wood, Mrs. Charles Love, Mrs. T. W. Nale, Mrs. Joe Savage, Mrs. A. S. Boggs, Mrs. Gilliland, and Mrs. Maurice Stine.

FEBRUARY MORBIDITY REPORT

	Chickenpox	Diphtheria	German Measles	Influenza	Measles	Meningitis	Scarlet Fever	Smallpox	Tuberculosis All forms	Typhoid Fever	Whooping Cough
Barbour	1						1				
Berkeley		3					2			1	
Boone	4	3	1	22	42		4				3
Braxton	1			24				1			
Brooke	1	1			47						
Cabell	3	13					13			7	
Clay									1		
Doddridge		1		55	6						
Fayette		2		432			3				
Gilmer				8					1		
Grant				3	3		1				
Greenbrier		2		75							
Hampshire				7	75		1			1	
Hancock	2		2	250			2		1		
Hardy					18						
Harrison	37	1	1		7	3	10				13
Jefferson		1		54					1		
Kanawha	13			7	40		4	2	7	1	19
Lewis	8	1		21	46		1			1	
Lincoln				2							
Logan		1		50	1		2	3		7	
McDowell	20	2		7	18		1	1			
Marion	5	2		1	6	1	2		3	4	15
Marshall		3			1			3	1		9
Mason				39					1		
Mercer	3	1		211	1		5				
Mineral	16	5		212	11		8		7		10
Mingo	1	1					4		2	1	
Monongalia	1	2	2	2	10		6		1		
Monroe					5		4	48			
Nicholas		1									
Ohio	19	2		101	137	1	5		11		8
Pendleton				1	12						
Pleasants		1									
Preston		1			5		2			2	
Raleigh	5	6		1			9		1		
Randolph	1	1									1
Ritchie				50	4						
Roane		1			6						
Summers		1		7							20
Tucker	2			4	4		5				
Tyler		1		40	18		5				15
Wayne								2			
Webster		1						5			
Wetzel				45		1					12
Wirt					8						
Wood		2		12	27		9	8			
TOTALS	143	63	6	1743	558	6	109	73	38	25	125

The West Virginia Medical Journal

Directed and Edited by the Committee on Publication

[The Committee on Publication is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible]

JAMES R. BLOSS, *Editor-in-Chief* - - - - - - - - Huntington

ASSOCIATE EDITORS:

WALTER E. VEST, Huntington — HARRY M. HALL, Wheeling — J. HOWARD ANDERSON, Marytown — C. A. RAY, Charleston

MR. JOE W. SAVAGE, *Secretary-Business Manager*, Charleston

Entered as Second Class Matter, January 1, 1926, at the Postoffice at Charleston, West Virginia

Vol. XXV — MAY, 1929 — No. 5

SARCOMA OF THE BREAST *

By C. A. HAMANN, M.D.
Cleveland, Ohio

It is generally recognized that sarcoma is one of the rarer pathological conditions affecting the mammary gland, and in this paper are included reports of five cases observed and operated upon.

Incidence.—Deaver, in 1917, cited 838 cases reported in the literature, prefacing his tabulation, however, with the statement that the figure was somewhat inaccurate, due to difficulties afforded by careless and faulty classification.

Fifteen cases of mammary sarcoma operated upon in the Lankenau Hospital and cited by Deaver represented 2% of the total of breast tumors observed over a period of 16 years.

Guest and Wilensky, in 1915, in reporting 22 cases of breast sarcoma, found that in a series of 282 malignant tumors of the breast 7.7% were sarcomatous. This figure is unusually high in comparison with statistics given by other observers.

Williams, in an analysis of 13,823 primary tumors, found 1,081 sarcomata, 99 of the latter of the breast. Thus, in this series 7.8% are sarcomatous and .017% of all the tumors recorded were breast sarcomata. In 2,422 breast neoplasms 3.5% were found to be sarcoma.

Rodman, quoted by Ewing, in a series of 5,000 cases of breast tumors, found a sarcoma incidence of 2.78%.

Sex.—The occurrence of breast pathology, of course, predominates in the female, and Fitzwilliams, reviewing the literature until 1919, found only 44 cases of sarcoma in the male breast.

Age.—The age incidence is greatest between 40 and 60.

Symptoms.—The size of the tumor may remain stationary for months or even years after it is first noticed, but when growth ensues it is, as a rule, very rapid, and these tumors usually attain gigantic proportions before the patient comes under the observation of the surgeon.

Most frequently the tumor is partly cystic, partly solid. The overlying skin is not adherent in the earlier cases and the tumor mass is movable upon the underlying pectoral muscles. The overlying veins are usually markedly distended. Later, the expansion of the tumor, aided by hemorrhagic and degenerative changes, stretches the skin markedly and ulceration supervenes. The axillary glands are not involved, as a rule.

In the early stages the diagnosis is often difficult, but, in brief, a large tumor of the breast, partly cystic and partly solid, not adherent to the skin and with no axillary adenopathy, is probably sarcomatous.

Pathology.—The usual classification of mammary sarcomata is into two major groups, namely, the

* Original paper.

cystic or adenosarcomata, and the true sarcoma or solid type. In regard to prognosis, the latter is the more malignant.

Another classification is based upon minute cell structure, *i.e.*, round cell, spindle cell, chondrosarcoma, etc. Of these, the small, round-cell type is the most malignant, and is the only type showing metastasis to regional lymph nodes. Next in degree of malignancy stands the small spindle-cell type, followed by the mixed and intermediate forms. Increased vascularity is characteristic of these tumors and the metastases are usually through the blood stream.

Treatment.—Radical amputation, including removal of the pectoralis major, minor and axillary adenectomy is the operative procedure of choice.

By some it is contended that axillary dissection is superfluous, since axillary metastasis is not the rule, and that simple mammectomy will suffice. However, since the true cellular characteristics and degree of malignancy can not be determined preoperatively, and since the radical operation will include a more thorough removal of the surrounding vascular connections, it seems the logical choice.

CASE 1.—Mrs. S., age 43, admitted July 5, 1921. Seven years ago noticed a small, painless lump in left breast; at that time it was the size of an English walnut. During the past year it had increased rapidly in size.

Left breast is the size of a large grapefruit. It is partly cystic and partly solid. The overlying skin is bluish in color and the superficial veins are markedly distended. In the upper outer quadrant is a small area of ulceration. No axillary or supraclavicular adenopathy.

Operated upon July 6, 1921. Radical breast amputation.

Pathological report: An amputated breast with subcutaneous tissue and muscle attached. The breast is practically replaced by a large tumor the size of a football, partly cystic and partly solid. In one area superficial necrosis the size of a fifty-cent piece is seen, and on section the underlying tissue is seen to be cystic and somewhat necrotic. Parallel section of the breast causes a thick, yellowish, mucinous material to exude, and the cut surface is seen to range from whitish to reddish yellow and many areas of gelatinous consistency are evident. Section through the mass shows a characteristic growth of embryonic connective tissue elements. In parts the growth is made up chiefly of large, rather deeply chromatic, nucleated cells and pale cytoplasm, while the greater bulk is composed of spindle cells. These are held in a sparse, vascular connective tissue stroma. In some of the sections gross hemorrhagic extravasation is a marked feature.

Diagnosis: Spindle-cell sarcoma.

CASE 2.—Mrs. V. D., age 40, admitted May 12, 1926. Six months ago she first noticed a firm lump in left breast, which was about one half inch in diameter. Gradual increase in size until it has reached present proportions. No pain; no discharge from nipple. Mechanical inconvenience is the only complaint.

Left breast almost wholly replaced by a tumor mass, partly cystic, partly solid. Overlying skin tense and bluish in color with markedly distended superficial veins. Mass is not adherent to the overlying skin nor to the pectoral musculature. No regional adenopathy.

Radical amputation of left breast May 13, 1926.

Pathological report: Sections show a rather typical appearance of an intra-canalicular connective tissue tumor, except that there is a marked difference in cellularity in adjacent fields. The ducts are lined with a single layer of low, columnar cells which are regular in size and shape and do not penetrate the basement membrane. The main bulk of the tumor is composed of myxomatous tissue, with areas showing considerable cellularity. Here the cells are rather large, irregular in size and shape, and occasional mitotic figures are seen.

Pathological diagnosis: Intra-canalicular myxosarcoma of breast.

CASE 3.—Mrs. K., age 45, admitted May 17, 1926. A small lump was found by the patient in the upper outer quadrant of left breast two years ago. No pain; no discharge from the nipple. For past six months it has increased very rapidly in size and an area of superficial ulceration appeared three weeks ago.

Large, partly cystic and partly solid tumor mass almost wholly replaces the left breast. Overlying skin purplish in color, and superficial veins are markedly distended. Upper outer quadrant shows an area of superficial ulceration with considerable sero-sanguinous discharge. No demonstrable regional adenopathy.

Radical amputation of breast May 19, 1926.

Pathological report: Sections show entirely tumor tissue, consisting chiefly of an overgrowth of connective tissue in intracanalicular fashion. These masses of tissue vary in cellularity. In many instances the tissue is of the young connective-tissue

type or myxomatous. Adjacent areas are more cellular. Cells are elongated, irregular in size, and show occasional mitotic figures. The ducts are lined by a single layer of cuboidal epithelium, which is everywhere well demarcated from the underlying connective tissue.

Pathological diagnosis: Intra-canalicular myxosarcoma of breast.

CASE 4.—Mrs. M., age 38, admitted May 27, 1926. Eight months prior to admission noticed a small lump in the left breast. At that time it was about an inch in diameter. Four months later it was noted that the mass was increasing in size, and since then the growth has been very rapid, and patient complains of recurrent, sharp-shooting pain in the breast. No discharge from the nipple at any time. No other complaint, and general health has been excellent.

Large, solid tumor with scattered cystic areas as depicted. Overlying skin very tense, bluish in color, but not adherent to the underlying mass, nor is the tumor adherent to the thoracic wall. No regional adenopathy.

Radical breast amputation May 27, 1926.

Pathological report: Specimen is a radically amputated breast, which is the seat of a large tumor about 5 inches in diameter, over which the skin is stretched but not fixed. Veins of the skin are prominent. Axillary lymph nodes are not enlarged. Section through the tumor shows its margin well demarcated but not encapsulated, and it occupies almost the entire breast.

Section of the tumor shows marked increase in the amount of stromal tissue between ducts. Ducts are somewhat irregular in size and shape and many are dilated. They are lined with cuboidal epithelium which shows no hyperplasia. Stromal tissue is tremendous in amount and varies in character in different sections, some areas being of myxomatous nature, others composed of loose connective-tissue fibrils in which are scattered large, fusiform-shaped cells which are hyperchromatic and show occasional mitotic figures.

Pathological report: Spindle-cell sarcoma.

CASE 5.—Mrs. F., age 52, admitted December 29, 1926. A small, firm tumor was noted by the patient in the upper outer quadrant of the right breast one year ago and has gradually increased in size without pain, and there has been no discharge from the nipple. Patient has never lactated. No other complaint.

Mass, which measures 6 inches in diameter, in right breast as depicted. No dimpling of skin or retraction of nipple. Mass is freely movable on the underlying pectorals and is not adherent to the skin. No regional adenopathy.

Radical breast amputation December 30, 1926.

Pathological report: Specimen is a radically amputated breast, in which there is an unusually large tumor, measuring about 6 inches in diameter. It is not attached to the skin above nor to the fascia below. On section the margins are well demarcated, but there is no capsule. The cut surface is moist, of a grayish color, and shows several collapsed cystic spaces containing outgrowths of the tumor tissue.

Sections taken in various areas show practically the same picture. The ducts and acini are widely separated and show nothing unusual save some distortion and moderate epithelial hyperplasia. However, the stroma is markedly increased in amount and is composed of loosely arranged spindle or polyhedral cells which vary widely in size and shape, show rather poor differentiation and fairly numerous mitotic figures. These cells are separated by a fibrillar, edematous connective tissue. Several areas show giant cells which contain rather large, vesicular, central nuclei.

Pathological report: Spindle-cell sarcoma.

I am indebted to Dr. W. J. Sheehan for the pathological reports.

BIBLIOGRAPHY

1. Deaver, J. B., McFarland: "The Breast—Anomalies, Diseases and Treatment."
2. Williams, W. R.: "The Varities of Mammary Neoplasms and Their Relative Frequency." *Brit. Med. Journal*, Sept. 10, 1892, 576.
3. Geist, J. H.: Wilensky, A. O., *Annals of Surgery*, LXII, 11-21, 1915.
4. Fitzwilliams, Duncan C. L.: "On the Breast," 1924.
5. Ewing, James: "Neoplastic Disease," 1928.
6. Williams, W. R.: "Sarcoma of the Breast." *Medical Chronicle*, Manchester, 1893-4, XIX, 289-361.
7. Williams, W. R.: "Diseases of the Breast." "Twentieth Century Practice of Medicine," XVII, 542.

ACUTE HEAD TRAUMAS *

By PAUL R. SIEBER, M.D., F.A.C.S.
Mercy Hospital
Pittsburgh, Pa.

The cranium and its contents have always been a vulnerable part of man, and since the time of Hippocrates there have appeared in medical literature reports of observations made in cases of acute head traumas.

At first, the injury to the cranium was considered of prime importance, and for many years the symp-

* Read before the Monongalia County Medical Society, Morgantown, W. Va., November 8, 1928

toms and treatment were directed to the associated fracture of the skull. With the progress of medical and surgical sciences, and with the slow accumulation of the knowledge of some of the physiological functions of the brain and its circulation, under normal as well as abnormal conditions, we began to realize that the seriousness of these types of injuries was not due to the frequently associated fracture of the skull, but to the injury of the intracranial contents.

I believe we are safe in making the statement that, if we had nothing more than the fracture of the skull to deal with in this type of injury, there would be practically no symptoms, there would be no mortality, and, with few exceptions, no indication for surgical intervention.

Strange as it may seem, many today speak in terms of "fracture of the skull" rather than of injuries to its contents. Not until we can shake off this obsolete idea of considering the fracture of the skull as the pathological entity can we ever hope to deal successfully with this serious type of injury. With few exceptions, the fracture of the skull has nothing to do with the treatment of brain injuries, the chief exception being a depressed fracture. Often, indeed, the fracture serves as a life-saver by permitting the cerebrospinal fluid and blood to escape from the skull into the scalp, and thus lower the intracranial tension, thereby relieving the pressure upon the cerebral cortex and the resulting damage of it.

Therefore, the various types of fracture that may occur in the skull are more of academic interest than of practical importance.

Clinical methods now enable us to secure more accurate information than was formerly possible in cases in which fracture of the skull is suspected; but, because of limitations in x-ray diagnosis, particularly in connection with fracture at the base of the skull, considerable difficulty exists in definitely demonstrating the presence or absence of fracture in a certain percentage of cases.

The fractures are almost always produced by the application of violence to the vault, which causes the skull to change in shape so that the bone becomes temporarily flattened at the site of impact. The fracture lines generally start at this point, as it is here that the greatest strain is thrown on the continuity of the cranial bones.

The fractures follow certain well-defined rules. In most instances they move from the vault down into the base, though sometimes they travel along the vault instead. In the base, the fracture lines generally select the bed of the fossa between the stronger bones that form its boundaries and, for the most part, are directed toward the central part of the skull. The fractures also tend to run in the direction of the line of violence. When the point of impact is in the back of the skull, the direction is from back to front. When the force strikes on the side of the head, the fracture runs toward the opposite side, and if the contact is in the frontal region, the fracture is directed posteriorly.

In general, the fracture has a tendency to seek the lines of least resistance. An expanse of skull with gradual curvature is less resistant to violence than an area of bone with sharp curvature, and the fracture most often seeks out the former unless other factors are present to modify its course. The normal suture lines of the skull, especially on the vault, are also involved in many fractures, because they are naturally weaker than the rest of the bone.

Many classifications of fractures of the skull have been made. A practical and convenient one which we have used for some time divides them into three main categories: First, those involving only the vault; second, those involving only the base; third, those involving the vault and the base. The type of fracture was classified as simple, compound, linear, comminuted, or depressed.

A further subdivision was made according to the position of the fracture, especially if it involved the base: (*a*) anterior fossa, (*b*) middle fossa, (*c*) posterior fossa; and if the vault only was involved: (*a*) anterior, (*b*) lateral, (*c*) posterior.

We have had the opportunity of observing and having under our personal care 439 acute head traumas, and it is the results of these observations that I want to bring to you.

In this group of cases there were 283 definitely proven fractures. Undoubtedly, many more fractures were present, but were excluded because their existence could not be demonstrated. In not a few cases we had good clinical reason to believe that, at least, a basal fracture had occurred, but its existence could not be demonstrated and, therefore, had to be eliminated. Of these fractures 151 were compound and 137 were simple; 75 involved the base alone, 96 the vault alone, and 112 involved both the vault and base, while 31 were depressed.

In my introductory remarks I have stressed the importance of injury to the intracranial contents in acute head traumas. Any force sufficient to break the skull rarely, if ever, fails to injury its contents

in some way. Not infrequently a blow may be received on the head that may not produce a fracture but may cause serious injury to the structures within. We have seen a case at autopsy where no fracture of the skull was present, but there was laceration of brain tissue with hemorrhage from cortical vessels.

As the management of these serious types of injury revolves about the proper recognition and handling of the various conditions that may occur within the skull, I want to present to you our opinions and conclusions obtained from our experience.

We have classified intracranial injuries in the usual way as follows: 1. Concussion of brain. 2. Contusion of brain. 3. Laceration of brain. 4. Compression of brain. 5. Contre-coup contusion or laceration of brain.

Concussion is a clinical term applied to a condition following injury of the brain. Originally it was broad in its scope—so broad that Galen and Hippocrates included, under the term *commotio cerebri* or concussion, all injuries of the head, even severe cerebral laceration and intracranial hemorrhage.

With increasing knowledge, there has been a tendency to limit the term *concussion* to those cases which do not show the clinical syndrome of cerebral pressure, and to those in which contusion and laceration are not apparent. A fine differentiation between concussion and microscopic contusion is not possible at present, because there is no general agreement in the literature as to the exact definition of concussion. The pathological definition, widely taught, is that concussion is part of a condition which has for its pathological basis scattered microscopic contusions and petechial hemorrhages. On the other hand, Miller has recently offered the opinion, from experimental work, that concussion depends on purely pathological disturbances.

In the patients who die of injury to the head, autopsy practically always reveals numerous contusions and petechial hemorrhages in the brain. However, cases have been reported in which post-mortem examination did not show any gross lesions.

From a purely clinical standpoint, most surgeons are in agreement that the terms *concussion*, *contusion*, and *laceration* represent lesions of degree only, and that it is unusual for concussion to be present without some degree of contusion. The symptoms of concussion are immediate and generalized; those of contusion progressive and tending to localization. However, the symptoms of concussion lasting for some hours may be masked by, and have to be distinguished from, those of an oncoming compression of the brain, especially if the compression is not due to the unusual delayed hemorrhage, which comes on after the patient has regained consciousness from his concussion.

Disturbances of consciousness are essential to concussion. Immediate unconsciousness is generally accepted as the constant symptom. The victim may be in a simple lethargic state from which he can be aroused, or in a deep coma. He presents a picture of shock, with rapid pulse, low blood-pressure, and general absence or diminution of reflexes. As unconsciousness passes away, general evidences of cerebral disturbance appears. There is headache, vertigo, often nausea and vomiting, and almost always more or less loss of memory of the events incidental to the injury. The severity and duration of the symptoms are most variable. In a mild case recovery occurs after a brief interval, as in the boxer who receives a blow on the chin, takes the count of ten, and within a short time has recovered completely. In more severe cases, when consciousness has been restored, the patient may perform more or less automatic acts of which he subsequently has little memory, and may be left for a time incapacitated both physically and mentally. In still more severe cases, profound unconsciousness may be present for hours, during which time reaction to external stimuli is entirely abolished. It is in this latter type of case that, in addition to the concussion, more serious lesions are always present.

A certain percentage of the cases of concussion, regardless of the apparent degree of injury to the brain, are followed by the persistence of headache, dizziness, and at times ataxia, especially when subjected to physical or mental exertion. I have no doubt that you have all seen this deplorable condition which often leaves the patient a permanent victim of what is frequently called post-traumatic neurosis.

How should this condition of so-called concussion of the brain be treated—those cases which do not have a depressed fracture and which never show any of the typical signs and symptoms of compression? There is certainly never any indication for surgical interference in this type of case. Operation can accomplish nothing, and, if performed, is only an added shock which may be the factor deciding against the recovery of the patient. Complete physiological rest is the principal factor to obtain readjustment in a brain that has been subjected to concussion. Put the patient to bed, keep him warm,

treat his shock, and watch carefully for any signs of compression. In the early stages, sedatives, especially morphia, are seldom necessary and are rarely indicated. Do not make the early recognition of an associated compression difficult by a large dose of morphia. If this simple line of treatment is followed in pure concussion, even though it is associated with some degree of contusion or even mild laceration without hemorrhage, the patient will not die. On the other hand, if there is evidence of extensive pathological lesions, such as severe contusion and laceration, the relief of an accompanying hemorrhage will not save the life of the victim.

The only indications for operative interference in acute head traumas is the elevation of depressed fractures and the relief of intracranial pressure which has advanced to the dangerous stage of medullary compression.

Whereas, the mortality in concussion of the brain is low, being 5½% in our series of 213 cases, the morbidity is quite high. Some of these patients had other injuries such as fractured femurs, pelvis, etc., which were no doubt a factor in producing death.

Thirty-one per cent of these patients had persistent headache, vertigo, and the various types of mental disturbances with which you are all familiar, lasting for a period of at least ten days. Not a few patients retained one or more of these symptoms indefinitely, so that they were totally incapacitated.

Formerly, these cases were classified as traumatic neuroses. The exact percentage we have had I am unable to give you, but I know it is a goodly number. For years we have tried to avoid these disabling symptoms by keeping in bed, for at least two weeks, every case of concussion, regardless of how mild it may be. They are not allowed up until the headaches have entirely disappeared, and when they do get up they are watched carefully for headache, occurring especially in the evening. If it recurs, they are put back to bed immediately. If the symptoms persisted, we frequently used repeated lumbar puncture, saturated magnesium sulphate and hypertonic saline solutions. We are of the opinion that this method of treatment is essential, and that in the majority of cases it will prevent the disabling sequelæ not infrequently seen.

However, there were always a certain number of cases which, in spite of any type of treatment tried, were permanently disabled by persistent headaches, dizziness, and various cerebral disturbances. As a rule, these patients were treated symptomatically and soon were lost track of; in fact, they were rather unwelcome visitors to most surgeons.

In 1922, Penfield, while injecting air into the ventricles through the spinal canal, in an attempt to localize a possible cerebral lesion, noticed that the patient was relieved of excruciating headaches. Although the relief was permanent in this case, the full significance of the result was not at that time realized, possibly because the procedure was undertaken from a diagnostic and not a therapeutic point of view. Since 1926 he has injected air through the spinal canal into the cerebral subarachnoid space in carefully selected cases, and has reported very favorable results from the procedure, which he calls "lumbar air insufflation."

Recently, we have employed this same procedure, and, although the number of cases treated is too small and the time of follow-up too short to draw any definite conclusions, we feel that it has been most satisfactory so far, and that it offers some hope of benefiting these deplorable cases.

We have used the same technique as advised by Penfield. Complete aseptic precautions, preferably in the operating room, are essential. The patient is given ¼ grain of morphia, as the injection of air causes an exaggeration of the headache. As we are to deal with air and fluid in a closed space, the position of the head in relation to the location of the headache is very important. If the location of the headache is right-sided, place the patient on his left side in a horizontal position. Do a lumbar puncture and measure the spinal-fluid pressure. Then tip the table so that the head is approximately 30 to 40 centimeters above the feet. If the headache is in the middle or anterior thirds of the head, rotate the brow up to about 45 degrees. In this position the injected air passes directly to the fronto-parietal region by way of the basal cisterns and very little will enter the ventricles. Withdraw spinal fluid in 5-c.c. amounts, alternately injecting after each withdrawal 5 c.c. of air. The whole system of tubing is connected by stopcocks in a closed system. In this way conditions are perfectly controlled and with a tight-fitting syringe the amounts of air injected, or fluid withdrawn, can easily be controlled.

From 85 to 100 c.c. of fluid is withdrawn and replaced by an equal amount of air, so that the arachnoid spaces are completely filled. At the close the pressure should be about normal.

Without altering the position, the patient is sent to the x-ray room, where horizontal and perpendicular plates are made in each head position used in

the method of ventriculography. Before x-raying the head in each new position, the head is oscillated thoroughly so that the air is carried through all parts of the subarachnoid space.

The plates, taken immediately after the insufflation, usually show the air blocked off from the region where the headache has been located. In most of the favorable cases, plates taken 48 hours after the insufflation, the air is found to be evenly distributed throughout the subarachnoid space.

It is best to elevate the head of the bed on 8-inch blocks, with the side of the head where the headache was habitually most severe in the uppermost position. If the patient is allowed to sit erect, the air goes to the vertex and remains there. Therefore, this position is prohibited for several days. Following insufflation, the headache is usually very severe for a few days, but with the absorption of air it usually disappears entirely.

The fact that a certain group of headache cases seem to be cured by a specific form of treatment singles these headaches out from all others and makes it likely that they are caused by a common mechanism. This merchanism, obviously, has to do with an abnormality in the cerebral meninges. Whether this abnormality may be an alteration in the normal circulation of cerebrospinal fluid, caused by fine meningeal adhesions, or whether the pain and vertigo have some other mechanical explanation, is not definitely known at present.

Foerster and others believe that a cystic arachnitis serosa is responsible for such post-traumatic symptoms as occur in these cases. Penfield states that, if this is true, the air which often forms a large bubble must separate the filamentous adhesions of such a condition, thereby relieving the headache.

The abnormality, whatever it is, is obviously a mechanical one; but it seems better, for the present, to accumulate further data before attempting an explanation of the underlying pathology.

We believe, at the present, that it is very important to use great care in selecting cases for lumbar air insufflation. All headaches can not be cured by this method, and the indiscriminate use of it will not only cause unnecessary suffering but might well prove to be dangerous.

Headache and dizziness are the chief symptoms in these cases. The headache is invariably localized. It may spread to a certain extent, but it is definitely referred to one particular point. In our experience it is most often frontal, but it may be situated near the site of injury. The character of the headache is dull and fairly constant, but is exaggerated at times, becoming very severe. Any physical exertion or mental excitement almost invariably increases the pain, while blowing the nose or stooping may make it worse. The vertigo usually appears soon after the injury and is often described as a "lightness in the head." It may come on while walking or in getting up from a chair, and at times may be so severe that the patient fears that he will fall. These patients do not show typical nystagmus or other evidence of a vestibular lesion.

In general, there are no physical signs typical of this type of headache. However, the diagnosis may be made in the absence of abnormal physical signs, when there is a history of localized headache associated with transient attacks of vertigo, all dating from a severe head injury.

For the present, at least, this method of lumbar air insufflation, although giving very satisfactory results in selected cases, must not be looked upon as free from danger, and its indications and safeguards should receive careful consideration before it is used.

There remains one other condition that occurs in acute head traumas. I refer to compression, or acute intracranial pressure. This is usually due to hemorrhage, with or without an associated edema, and, unless relieved, in itself will produce rapid death. It is true that, in the more severe types of cerebral injury, it necessarily occurs with extensive contusion and laceration, and even though it is relieved and controlled the condition goes on to a fatal termination. However, there are a fairly large number of cases in which compression is the principal factor, and if it is recognized and properly relieved the life of the patient may be saved.

I have purposely tried to avoid the experimental and theoretical side of intracranial injuries, as we must admit that it is a round-about way and one which would take us over ground that may be assumed to be, in great part if not wholly, familiar to us all. However, I believe it would be proper in considering compression to state some of the well-recognized experimental work, from which the necessary practical applications can easily be made.

It is a recognized clinical fact that a rapid encroachment upon the intracranial space by any foreign body is frequently associated with a slow, high-tension pulse. This phenomenon has been an almost uniform accompaniment of artificially produced cerebral compression, in the laboratory experience of many investigators.

As the brain tissue is practically incompressible and is enclosed in a non-expansible skull box, the introduction of an intracranial foreign body is only possible through the emptying of the surrounding vascular channels.

In 1902, Cushing (*American Journal Medical Sciences*, 1902, Vol. 124, pages 375-400) produced experimentally, in dogs, a general cerebral compression by allowing normal salt solution, warmed to body temperature, to enter the cranial space through a canula screwed into a trepine opening in the arch of the atlas. The tension of the fluid was regulated by the degree of elevation of a pressure flask and was recorded on a revolving drum simultaneously and in exactly the same way as the arterial pressure. Direct observation of the cortical circulation was made through a circular disk of glass with a beveled edge, made to fit a large trepine opening near the mid-line so as to expose the longitudinal sinus as well as the surrounding pial vessels. The rate and excursion of the respiratory wave was also recorded on a revolving drum with the intracranial and arterial pressures. In this way, observations were made on the effect that various degrees of intracranial pressure had upon the respirations and general circulations, as well as the vascular alterations of the brain itself. When the pressure of the fluid in the intracranial space was allowed to increase, there was first noted a distinct evidence of venous stasis, with bluing of the exposed convolution and later a narrowing of the longitudinal sinus. As the intracranial tension approximated the arterial pressure a condition of anemia was produced, as shown by the blanching of the cortex, the veins remained filled with blood and very little, if any, circulation was evidenced. As the pressure produced is a general one, a similar anemia is present in the medulla, where the vital centers are poorly nourished, if at all. This anemia of the medulla stimulates the vagus center, slowing the pulse and likewise the vasomotor center, resulting in an increase in the general arterial pressure to a point above that of the high tension in the intracranial space. The pale cortex becomes pink and the respirations, which are very irregular or perhaps have ceased entirely, are again resumed as a result of the return of blood to the respiratory center. If, after this readjustment of circulation has taken place, the intracranial pressure is again increased to a point above that of the arterial pressure, anemia is again produced and the blood-pressure once more rises in its turn, to the point of exceeding the intracranial tension. Thus the process may be continued until the arterial pressure is raised to a point two or three times its normal level, in an attempt to exceed the intracranial pressure and supply normal nutrition to the bulbar centers. With the continued increase of the intracranial tension, sooner or later a time comes when the vasomotor center weakens and is no longer able to supply sufficient blood to the medulla. The blood-pressure falls below that of the intracranial tension, and the animal dies with a low blood-pressure and rapid pulse, which may continue for some time after the respiration has ceased — a typical respiratory death.

In order to determine whether this physiological response represented a regulatory mechanism which controls the rise in blood-pressure, or is nothing more than some uncontrolled reaction from irritation of the vasomotor center, he first eliminated the inhibitory action of the vagus center by dividing both vagi. Under these conditions, the blood-pressure and degree of intracranial tension followed one another with the same regularity as before, the blood-pressure always tending to remain slightly above that of the tension in the intracranial space. If at the same time a loop of bowel was exposed, the caliber of the mesenteric vessels was seen to diminish during the great rise in blood-pressure, and to dilate if the tension upon the brain was released. Again, if the vasomotor control was eliminated by division of the spinal cord above the level of the sympathetic nerves to the abdominal viscera, only the slowing of the pulse was produced, with no increase whatever in the arterial pressure. Cushing's experiments, therefore, tend to show that if tension in the intracranial space is rapidly increased there is produced an anemia of the brain and medulla. As a result of the approaching medullary anemia, there is a physiological response represented by a rise in arterial pressure to a point above that of the intracranial tension. In this way a fatal medullary anemia, which otherwise would be the result of an equalization of the intracranial and arterial pressure is warded off. The mechanism of this response is attributed to the vasomotor control of the large splanchnic area, which holds the arterial pressure slightly above that in the intracranial space. With exhaustion of the vasomotor mechanism there is an equalization of the intracranial and arterial pressures, following which there is a fall in the blood-pressure and respiratory failure in consequence of the resulting bulbar anemia. Hill (*Physiology and Pathology, Cerebral Circulation*, London, 1896), Duret

(*Etude experimentale et clinique sur les traumatismes cerebrau*, Paris, 1878, p. 186), Cybulski (*Central-blatt für Physiologie*, 1890, 835), and others have shown that death is not produced until the intracranial pressure equals or exceeds the arterial pressure.

In cerebral trauma several theories have been advanced to explain the progressive increase in intracranial tension, to such a degree that the pressure in the cerebral vessels is overcome and anemia results. Hill (*loc. cit.*, p. 188 *et seq.*) and Bergmann (*Deutsche Chirurgie, die Libre von den Kepf verligungan*, Stüttgart, 1880, ZZZ, p. 420) state that as a result of a local increase in intracranial tension there is a complete stasis of blood in the obliterated area. This produces an increased pressure in the vessels of the surrounding areas, and causes a transudation of plasma from the capillaries, thus increasing the volume of the compressing body. In this way a vicious circle is established, so that the anemia may advance until the bulbar centers are encroached upon. According to Courtney (*Boston Med. and Surg. Journal*, 1899, CZI, p. 347), trauma resulting from blows paralyze the cerebral vasomotor centers. This paralysis results in a dilatation of the vessels which they control, producing arterial stasis, with a rise in intracranial venous pressure, thrombosis and transudation. As the transudation can not be absorbed, because of the high pressure in the veins, it further impedes the circulation until complete anemia results. Cannon (*American Journal of Physiology*, 1902, VI, pp. 103-121) attributes the intracranial tension to edema. Pathological changes are brought about which result in an impairment of the nutrition of the injured area. As a result the tissues undergo changes, producing an increase of the internal osmotic pressure and, therefore, an increase of water content. The edematous region compresses the blood vessels in the surrounding areas, nutrition is again impaired and the osmotic pressure increased, producing further edema. In this way, the edema spreads until the cerebral circulation is so encroached upon that anemia results.

Whatever the correct physiological explanation may be for an increase in intracranial pressure following cerebral trauma, the agreement is quite universal that acute head traumas are often accompanied by an increase in intracranial tension, and, furthermore, that this tension frequently rises to such a height that the cerebral vessels are compressed, resulting in anemia and death. By injecting wax into the cranial cavity, Duret (*Etude experimentale et clinique sur les traumatismes cerebraux*, Paris, 1878, p. 186) has shown that decreasing the intracranial space by five per cent produced coma, and by eight per cent resulted in death.

During the past 12 years, in all serious head injuries we have followed very closely the pulse rate, respirations and arterial pressure, as well as other symptoms. In many instances there has been a striking similarity between the symptoms preceding death in cases of severe brain injury and those produced in animals by increasing intracranial pressure to the point of cerebral anemia. By closely observing the pulse rate and arterial pressure at frequent intervals with the increasing stupor, there is observed a slight but definitely progressive increase in blood-pressure and decrease in pulse rate. In the final stage certain typical signs manifest themselves. As the time of death approaches, there is stertorous, perhaps Cheyne-Stokes, breathing. The temperature rises rapidly, the reflexes disappear, and the patient becomes relaxed. The blood-pressure rapidly falls to zero and respirations cease, leaving the running pulse of a vasomotor failure to end the story. The vasomotor mechanism has been unable to maintain the blood-pressure above the intracranial tension and supply sufficient blood to the respiratory center.

We believe that not infrequently death in cerebral injuries is the result of medullary compression and edema, and that the degree of encroachment upon the vital centers may be ascertained by frequent observations of the pulse rate, blood-pressure, and spinal manometer readings. In such cases relief of pressure is advisable, not only to save life but to lessen the danger of numerous nervous disturbances so frequently seen following these injuries. Not all cases have an associated intracranial tension great enough to produce medullary compression. In some there is a sufficient escape of blood and cerebrospinal fluid through a line of fracture to relieve an otherwise fatal compression. These cases do not show a high tension, slow pulse, with high spinal manometer readings, so characteristic of approaching medullary compression. In other cases the associated laceration or contusion of the brain may be so extensive that a relief of pressure not only fails to avert a fatal outcome but is an added shock, usually hastening death. There is a group of cases midway between these mild and severe types, in which there occurs a progressive increase in intracranial pressure. Unless there is early relief of the tension a fatal outcome is a certainty. We believe that, with care, this group of cases may be properly differentiated by frequent

LIBRARY OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA

blood-pressure and pulse-rate observation and spinal manometer readings.

From these observations one may not only determine the degree of cerebral compression but they may be utilized as an indication for or against surgical interference. Whenever a case of head injury shows a progressive increase in arterial pressure with a corresponding decrease in pulse rate, it is not only advisable but imperative that immediate relief of intracranial pressure be instituted. If the pressure is not relieved before the dangerous stage of medullary compression occurs, as shown by a falling blood-pressure and increasing pulse rate, so much cerebral damage may have been produced that recovery is doubtful.

Many advise repeated lumbar punctures for relief of pressure in these types of cases, and report a decrease in mortality since its employment. We have used it in those cases in which the compression advances to a certain stage and then remains at a standstill. However, our principal use of it has been as a diagnostic aid. We have observed cases in which there has been little or no increase in the pressure of the fluid in the spinal sac, but in the same case at time of operation an enormous increase of intracranial fluid was found. These findings may be explained by a dislocation downwards of the brain, blocking the foramen magnum and shutting off the spinal fluid from the effects of tension existing in the cranial cavity.

There is also some danger in this procedure, unless the tension is relieved slowly. I have seen several deaths resulting from a herniation of the medulla into the foramen, caused by an unequal pressure existing in the cranial cavity and the spinal sac.

The use of hypertonic saline solutions or saturated magnesium sulphate in the milder cases of compression is frequently beneficial. Whenever relief of intracranial pressure is indicated, we usually employ the sub-temporal decompression. By this method the meningeal vessels and the area where pressure is most dangerous may be directly exposed. Hemorrhage often is the principal factor in compression, and if it is not controlled, as in repeated lumbar puncture, you may lose your patient. The opening in the skull should be large and extend down to the floor of the middle fossa, to secure free drainage. An intradural drain is allowed to remain in the middle fossa for 24 hours. The temporal muscle and fascia gives a firm closure and will prevent subsequent herniation.

In the 439 cases of acute head traumas which we have had the opportunity of observing and treating, 283 showed a definite increase in the intracranial pressure. The total mortality in this group was 35.2%. Many of the patients who died were in a moribund condition when first seen, having not only a severe head injury but also other injuries such as rupture of large viscera and fracture of long bones. If we exclude those who died four hours after admission to the hospital, the total mortality was 21.6%.

Great emphasis has been placed upon the pulse rate, arterial pressure, and spinal manometer readings, in the treatment of these cases, although the other signs and symptoms of compression were closely followed. From these observations we have divided our cases into three groups: First, those cases which at no time showed evidence of a dangerous intracranial pressure; second, cases presenting signs of a dangerous pressure which produce serious medullary symptoms; third, those cases which present symptoms of an advanced medullary compression or in which there is evidence of severe laceration or contusion of the brain.

In the first group there were 146 cases. As in this group there was at no time any evidence of a dangerous compression, surgical interference was indicated only when the fragments of a fracture were depressed. We believe that, if all depressed fragments are elevated as soon as the general condition of the patient permits, the danger of many neurological conditions could be greatly decreased.

The prognosis as to life in this group is very good, provided that infection of the meninges and brain tissue is avoided in those cases where the fracture is compound. In 36 cases operative interference was necessary, and of the entire group all made good recoveries.

It is in the second group—those cases with an increase in intracranial pressure that endangers the function of the medullary centers—that we find blood-pressure, pulse and spinal manometer observations most useful. In this way, we believe, in most cases the degree of pressure, as well as the importance as to whether or not the pressure is increasing, may be determined. Thus, these observations are utilized not only to determine the degree of pressure but also as an indication for or against the necessity of operation. If a rapidly increasing pressure can be relieved before it produces serious damage to the brain, in many cases a fatal outcome may be avoided. In this second group there were 82 cases and all

country. White,[3] in 1927, in discussing the incidence of heart disease in Massachusetts, stated that in his series of 2,400 cardiac patients with organic changes 41% were rheumatic, 20½% had coronary disease (arteriosclerotic) without hypertension, 13½% had hypertension disease; 4% of these patients had luetic cardiac disease. Wood, Jones and Kimbrough, in 1924,[4] published data which indicated that climate and race might be factors in considering the incidence of the various types of heart disease. They concluded that organic heart disease was twice as common in the negro as in the white race; that hypertension accounted for 53.5% and syphilis 21.4% of the cases in the negro; that angina pectoris was twice as common in the white; that rheumatic heart disease is twice as common in Massachusetts as in Virginia, and that hypertension is more prevalent in Virginia. Harrison and Levine, in 1924,[5] showed a gradual increase in the incidence of rheumatic fever from the south to the north in eastern United States.

HYPERTENSIVE HEART DISEASE

It is fitting that we first consider hypertensive heart disease because in this portion of the United States it would seem to include the largest group of organic heart disease. I wish to emphasize the importance of early diagnosis before permanent damage is done. We know how little can be accomplished for the cardiac patient once the progressive vicious cycle is begun. It is to prevent these early changes that we should direct our efforts. The following table on diagnosis and treatment has been prepared and is being distributed to you to facilitate the discussion of this subject.

CASE 1.—This young man is 26 years old. He was admitted with the chief complaint of hypertension, which he knew he had had for two years. He complained of slight dyspnea on climbing a steep grade, and of slight radiating pain in left upper arm. Three days before admission he had noted a pricking sensation over the precordium in the fourth and fifth interspaces to the left of the sternum. He has had measles, mumps, whooping cough, chickenpox, tonsillitis, and acute appendicitis followed by an appendectomy. He has been married for three years. There have been no pregnancies. His wife, several years before marriage, had had a severe fire burn over her posterior trunk, and was advised by her physician never to become pregnant. Coitus interruptus has been practiced during the last three years. On admission the blood-pressure was 180/80, mercury sphygmomanometer. His tonsils were small, with coalescence of the central crypts, and showed definite scar tissue. There was a carious left lower molar tooth, and the gums were retracted, showing slight inflammatory changes. The only abnormal urine findings were a consistent faint trace of albumen. Mosenthal urine concentration test showed a specific gravity varying from 1008 to 1030, and following the ingestion of 1500 c.c. of water the specific gravity dropped to 1006. Blood count was normal. The hemoglobin was 83%, the red blood cells 4,400,000. Blood Wasserman and Meinicke tests were negative. A basal metabolism gave a minus-1 rate. Intravenous phenolsulphonephthalein test 43% first hour, 15% second hour. The teleoröntgenogram gave an internal thoracic diameter of 28 cm. ML 7.4 cm. MR 2.4 cm. Aorta in second interspace measured 4.3 cm. The electrocardiogram revealed a moderate right ventricular predominance as shown in Figure 1. A week after admission a

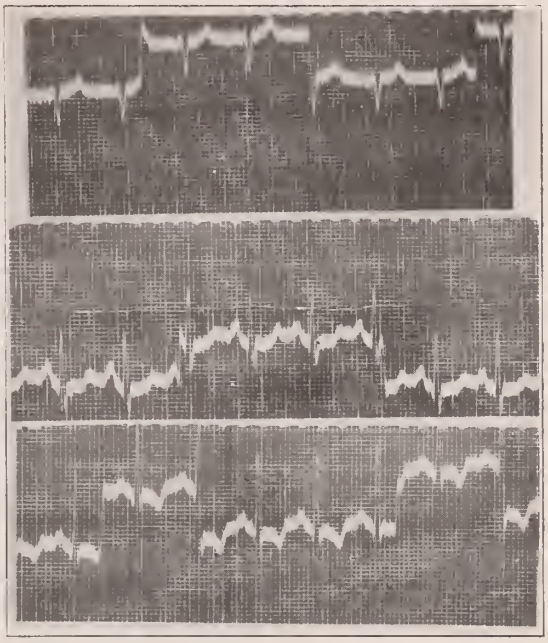


FIG. 1.—Tracing shows moderate degree of right ventricular preponderance.

tonsillectomy was performed under local anesthesia. Nine days after admission patient was discharged with a blood-pressure of 134/84. There was little change in the diastolic figure, but the systolic had fallen markedly. The patient has returned tonight, stating that he has felt much improved recently. It is interesting to note that there is no history of hypertension, cerebral hemorrhage, diabetes, nervous or mental disease in patient's family history.

This patient has been advised to practice nervous

relaxation, to rest after each meal, to get out of doors and take long walks. He works indoors as a bookkeeper and takes little physical exercise. His weight is normal. He was advised to add no salt to his food, and warned against continuance of coitus interruptus. His wife was called in, examined, and advised, much to her delight, to become pregnant. Patient was given a prescription for luminal, one and one half grains, to be taken each night. He was advised to restrict starches to a minimum, and to have his carious tooth extracted.

It is interesting to treat such a patient. There is hope of doing something for him. His family history is good, and there is no evidence of organic change. If he has his teeth properly treated, and if he is given plenty of assurance that he has no organic changes, we may be able to hold his blood-pressure down to normal and prevent the onset of the vicious cycle which follows organic changes resulting from hypertension. The most important factor is freedom from worry and mental strain.

CASE 2.—This next patient is a white male, 55 years old, who was admitted to the hospital about three weeks ago, complaining of cough and dyspnea. The cough has been dry, of about six months' duration. For several months he has been short of breath on walking a few miles, and for the past six months there have been recurrent attacks of nocturnal paroxysmal dyspnea and orthopnea. There has been slight upper abdominal soreness, occasional nocturia, patient voiding twice during the night. One year ago patient was cystoscoped and a diagnosis of right ureteral stricture with urinary stasis was made. He has had measles, mumps, whooping cough, typhoid fever, and recurrent tonsillitis. His mother died after a second cerebral hemorrhage, and one maternal uncle also died after a second cerebral hemorrhage. His tonsils were reddened and atrophied. There was a gingivitis of the chronic recessive suppurative type. His cardiac apex was palpable in the fifth interspace 13½ cm. to the left of the mid-sternal line. The heart sounds were markedly subnormal in intensity and pitch. Rate, duration and rhythm of heart sounds were normal. The chest was barrel-shaped, and the peripheral vessels were tortuous and beaded. Several urine examinations revealed normal urine. Mosenthal test revealed a day urine varying from 1.010 to 1.022, with a morning specimen, 38 c.c. in amount, the specific gravity being 1.005. Following the ingestion of 1500 c.c. of water at 7 A. M., 1850 c.c. of urine were excreted in three hours with a specific gravity dropping to 1.004. Intravenous phenolsulphonephthalein, 50% first hour, 90 c.c., and 10% second hour, 80 c.c. Blood Wasserman and Meinicke were negative. Four days after admission his blood-pressure dropped from 168/100 to 136/90. Teleoröntgenogram revealed a boot-shaped heart. The internal thoracic measurement was 31.5 cm. Heart measurements: ML 13.9 cm.; MR 4.1 cm. Aortic shadow 6.3 with prominent aortic knob. Under digitalis pulse rate dropped from 80 to 60 with the appearance of frequent extrasystoles. His weight is 164 pounds. Thirty-one c.c. of fat-free tincture of digitalis was given during a period of 14 days. Examination of fundi revealed a moderate degree of retinal sclerosis. Electrocardiogram revealed an inverted T-1 following digitalis therapy. (See Figure 2.)

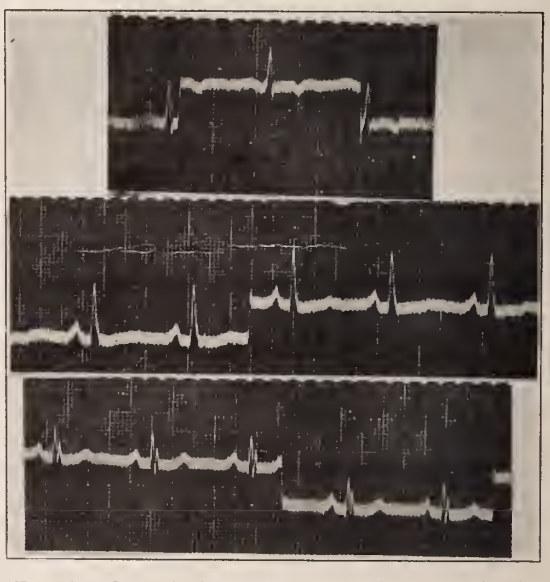


FIG. 2.—Lead 1 shows an inverted T, probably the effect of digitalis or myocardial damage.

This patient represents advanced hypertension and arteriosclerosis. We do not know whether he had an hypertension first and the arteriosclerosis developed later, or whether the hypertension followed the arteriosclerosis, or whether both conditions developed spontaneously. There is a family history which suggests that the patient was predisposed to cardiovascular disease. He has been a worshiper of Bacchus, Venus, and Vulcan most of his life, which may have hastened the process. His tonsils have been diseased for many years, and his teeth carious also for several years. He has had urinary stasis subsequent to a ureteral stricture for at least a year. The diagnosis is organic heart disease. Etiology—arteriosclerosis, hypertension, and

emphysema. Structural changes—cardiac enlargement. Physiological capacity—class 2-b; that is, patient's activity is greatly limited. The prognosis is poor. There is little evidence that patient will care for himself in the desired manner. There is marked enlargement of the heart, with borderline failure. The changes produced in the heart muscle are definite and will no doubt progress. He may live for one to three years under these conditions.

RHEUMATIC HEART DISEASE

I am distributing Table No. 2 on rheumatic heart disease, its diagnosis and treatment, which may be helpful.

We now believe that the heart is involved in practically every rheumatic infection under which term we group not only frank acute rheumatic fever with typical swollen, exquisitely painful joints, but also transient joint pains, chorea, tonsillitis with few exceptions, quinsy, and the undernourished child with frequent upper respiratory infections, purpura and erythema nodosum. In these infections, cardiac involvement is the rule, which involvement includes myocardium, pericardium as well as endocardium. Once suspected, we look for signs of the disease in the cardiac structures. Enlargement may occur within 24 hours of onset, although it is more usually found on the fourth or fifth day. The heart sounds may have a decreased intensity. The endocardial lesion usually produces a mitral stenosis revealed by the snappier character of the first sound, left, compared to the first sound over the pulmonic area, or a duplicated second sound along the left sternal border. Later, a typical diastolic murmur or a presystolic rumble may appear. No murmur is typical of mitral stenosis. Frequently a thrill is palpated. Mitral regurgitation is now considered a rare lesion only diagnosed in the presence of a systolic apical murmur transmitted to the axilla, cardiac enlargement, absence of first sound, left, with normal first sound, right, at the apex, and, if palpable, a heaving apical impulse. Aortic involvement is considered evidence of reinfection. The development of a diastolic murmur at the base of the heart in a case of mitral stenosis means either a Graham Steele murmur or an aortic regurgitation. Increasing pulse pressure and a celer quality of the radial pulse are probably evidences of a true aortic lesion. Pericarditis, we must remember, is usually entirely painless. The friction rub may sound like a valvular murmur. Sudden nausea and vomiting have been described as being typical of a pericarditis.[9] Persistence of an elevated temperature may point to the pericardial involvement. Riesman stresses the frequent increase in respiratory rate.[10] The cardiac

TABLE NO. 2

RHEUMATIC HEART DISEASE

The heart is always involved in rheumatic chain (acute rheumatic fever, arthritis, tonsillitis, quinsy, chorea, erythema nodosum, purpura, malnutrition with frequent respiratory infections).

DIAGNOSIS	TREATMENT
Myocardium, endocardium, and pericardium involved.	Rest.
Cardiac enlargement.	Clean up all foci of infection.
Normal cardiac apex not seen or felt before two years of age.	Clothe to prevent sudden chilling.
Normally palpable thereafter:	Avoid infections, especially those of upper respiratory tract.
2–6 years 6 cm. to left of mid-sternal line, 4th interspace, 1 cm. outside left nipple line.	Good nourishment and general hygiene.
6–12 years, 7 cm. to left of mid-sternal line beneath 5th rib, in left nipple line.	Salicylates in doses from 90 to 120 grains per day.
12 years plus, 8 cm. to left of mid-sternal line in 5th interspace, 1 cm. within left nipple line.	Convalescent criteria.[8] Lack of:
Right border:	Evidence of continued infection.
2–6 years, 2 cm. outside mid-sternal line.	Elevated temperature.
6–12 years, 3 cm. outside mid-sternal line.	Basal pulse rate 100 plus.
12 years plus, 4 cm. outside mid-sternal line.	Weight loss or no gain.
Subnormal intensity of heart sounds.	Signs of fatigue.
Arrhythmias (extra systoles, heart block, tachycardia bradycardia, auricular flutter and fibrillation).	Abnormal blood count.
Murmurs:	Decompensation.
Mitral stenosis.—Snappy first sound left, early or mid-diastolic murmur or presystolic rumble, heard best in recumbent posture or brought out after mild exercise.	Elevation of temperature two weeks after salicylates discontinued.
Nausea, vomiting, increased respiratory rate.	
Mitral regurgitation.—Rarely alone.	
Aortic lesion means reinfection.	
Friction sound may simulate murmur.	
Pain.	

muscle is believed to be always involved to a greater or lesser degree.

CASE 3.—This next patient is a white male student, 20 years old, who had acute articular rheumatism when eight years old. He has had recurrent tonsillitis, but no other rheumatic infections until three weeks before hospitalization, when he had a second attack of mild polyarthritis associated with fever. Three years ago he was told that he had a heart murmur. The cardiac apex on admission was palpable just below the nipple, about one half centimeter to the left of the left mid-clavicular line in the fifth interspace. His blood-pressure was 124/70. There was a distant crescendo presystolic murmur heard in the fifth interspace just within the apex. The first heart sound, left, was loud and booming. Blood Wasserman and Meinicke were negative. Blood count was normal. Sedimentation index was 18 mm. Urine was negative. An electrocardiogram revealed left ventricular preponderance (Fig. 3).

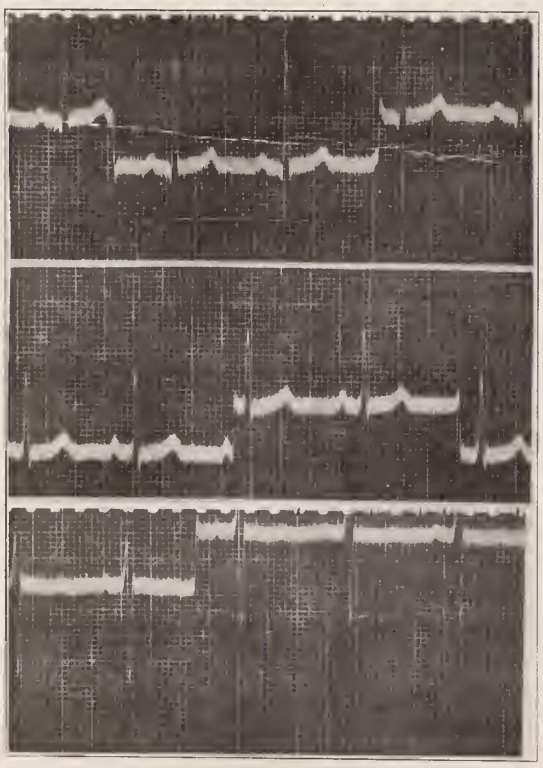


FIG. 3.—Tracing shows a left ventricular preponderance.

Three days after admission a tonsillectomy was performed, and two days later patient was discharged. The arthritis had subsided two days after hospitalization. Patient returned about one month ago. His blood-pressure was 142/80. The apex was palpable in the fifth interspace 11.5 cm. to the left of the mid-sternal line. There was a positive capillary, digital, and lip pulsation, and a Corrigan pulse. An occasional extra systole was heard. A_2 was snappy. Teleoröntgenogram revealed an increase in the left auricular shadow. Measurements: transverse cardiac diameter 12.0 cm., internal thoracic 30 cm. Diagnosis: Organic heart disease. Etiology: Rheumatic fever, active (polyarthritis-tonsillitis). Auricular hypertrophy, left. Mitral stenosis. Premature beats. Class 1; that is, he is able to carry on ordinary physical activity without discomfort.

The important question here is whether or not the progression in the heart lesion has been halted. During the five months following hospitalization there had been definite change. The pulse pressure widened, the systolic pressure rising more than the diastolic. Peripheral changes had developed, suggesting a definite aortic regurgitation. The presence of a diastolic murmur over the aortic area, however, may be due to a Graham Steele murmur, the result of pulmonary incompetence. It is quite possible, however, that he has an aortic regurgitation. I have observed frequently, during a rheumatic endocardial infection, that one of the earliest signs of an aortic lesion is the pulsus celer, which gradually develops during the course of a few weeks or months into a typical Corrigan water-hammer pulse.

CASE 4.—The next patient is a white boy, 15 years old, who has a history of recurrent polyarthritis and recurrent tonsillitis. He has dyspnea on running a short distance, of nine months' duration; also an awareness of cardiac action. He has had measles, mumps, whooping cough, and chickenpox. This was the history of the patient given me about 16 months ago. At that time he had a definite mitral stenosis. There was some question as to whether or not he had a subacute bacterial endocarditis at that time. He had the typical pallor of Von Neusser's febris pallida. His skin had a waxy appearance; the precordium bulged. The apex was palpable 11.5 cm. to the left of the mid-sternal line in the fifth interspace. The blood-pressure was 130/50. It was my impression that he had a pancarditis. His Wasserman and Meinicke were negative. His red-blood cell count was 3,150,000, the hemoglobin 58%. A tonsillectomy was performed after two transfusions. Examination of the tonsils histologically revealed erosion of the cryptic epithelium and embryonic connective-tissue proliferation. He gradually improved and was ultimately discharged. Culture of the tonsils revealed a short-chain streptococcus. He had a purple discoloration

of the anterior pillars which united in the mid-line of the soft palate. This gradually disappeared after tonsillectomy. During the past six months, patient has had no complaints except slight shortness of breath on running. In April of this year there had developed a positive capillary pulse, a positive Duroziez's murmur, and his blood-pressure was 100/0. He now has a loud to-and-fro murmur over the primary and secondary aortic areas. A teleoröntgenogram, taken recently, shows enlargement of both ventricles and of the great vessels at the base of the heart. Measurements: M.L. 9.8 cm.; M.R. 4.0 cm.; longitudinal diameter 15.2 cm.; internal thoracic diameter 23.5 cm.; f. 1.4 cm.; width of aorta in the first interspace 5.8 cm. Diagnosis: Diffuse cardiac enlargement with aortic dilatation.

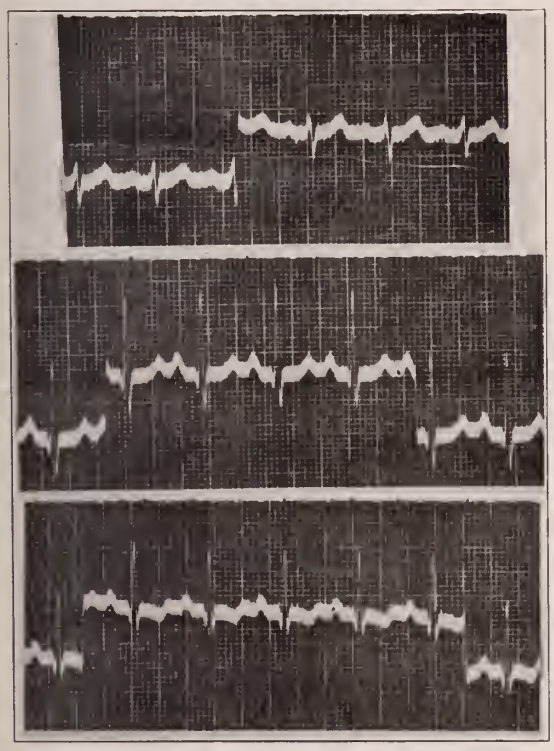


FIG. 4.—Tracing shows slight right ventricular preponderance.

This patient shows the result of repeated rheumatic infections. It is interesting to note the amount of pathological change in the tonsils with a clinical history of only one attack of tonsillitis. This patient has been advised to limit his activity to the point of comfort. He reports at intervals of two months for examination. If he can be kept free from upper respiratory infections, there may be no further progression of the lesion. The stenosis will increase, no doubt, as the scar tissue in the mitral valves and ring contracts.

LUETIC CARDIAC DISEASE

It is with considerable interest that we have somewhat recently learned that some cardiologists believe that 20 to 25 per cent of all luetic patients have cardiovascular changes incident to their luetic infection. These changes are recognized by changes in rate, rhythm, intensity of heart sounds, and murmurs. They have been noted to clear up rapidly following specific treatment early in the course of the infection. Death has actually been recorded following the pin-point rupture of an aorta before the secondary rash had appeared in which histological study revealed typical luetic changes in the heart and aorta. The chronic infection is more common. Cabot[2] has said that 12% of all failing hearts are luetic. E. S. Smith[11] gives the following diagnostic points in cardiovascular lues: arrhythmia, especially under strain, murmurs, precordial pain, history of infection, dyspnea on effort, and fever. Treatment of these patients should be begun whenever the infection is suspected, even though unproved serologically. Treatment should be continued throughout life, regardless of serological studies. Bismuth, mercury, and the iodides, arsenicals rarely, are the best specific measures to be employed.

CASE 5.—This patient, a colored female, 57 years old, five years ago noticed sharp, stabbing precordial and substernal pain induced by exertion, emotion, and noted also on retiring. Anxiety has accompanied the pain, but no actual fear. Dyspnea has been present for two years on moderate exertion. Sputum has been streaked with blood occasionally. She has had attacks of epistaxis for eight years. She complained of flatus, regurgitation of food aggravated by the ingestion of fried and fatty foods, and marked constipation. In childhood she had had measles, mumps, whooping cough, smallpox, and a dermatitis with ulceration which lasted until adolescence. She is a widow with five children. There was one miscarriage. Physical examination revealed the cardiac apex 1 cm. to the left of the left mid-clavicular line in the fifth interspace. There is a double murmur present, heard best over the primary and secondary aortic areas. Blood-pressure is 160/50, right arm lying down with a mercury sphygmomanometer. The first sound at the apex is faint. The lungs are clear. There is no edema. The liver is not palpable. Urine examination shows a slight cloud of albumen with a few hyaline and

granular casts. Her non-protein nitrogen was 24.0 mgs. per cent, the urea nitrogen 10.8 mgs. per cent. The Wasserman and Meinicke were both four-plus. Mosenthal urine test revealed a low fixed specific gravity. There were no noteworthy vascular changes. Electrocardiogram revealed a moderate left ventricular predominance with an inverted P_3 (Fig. 5). Heart measurements in the teleoröntgeno-

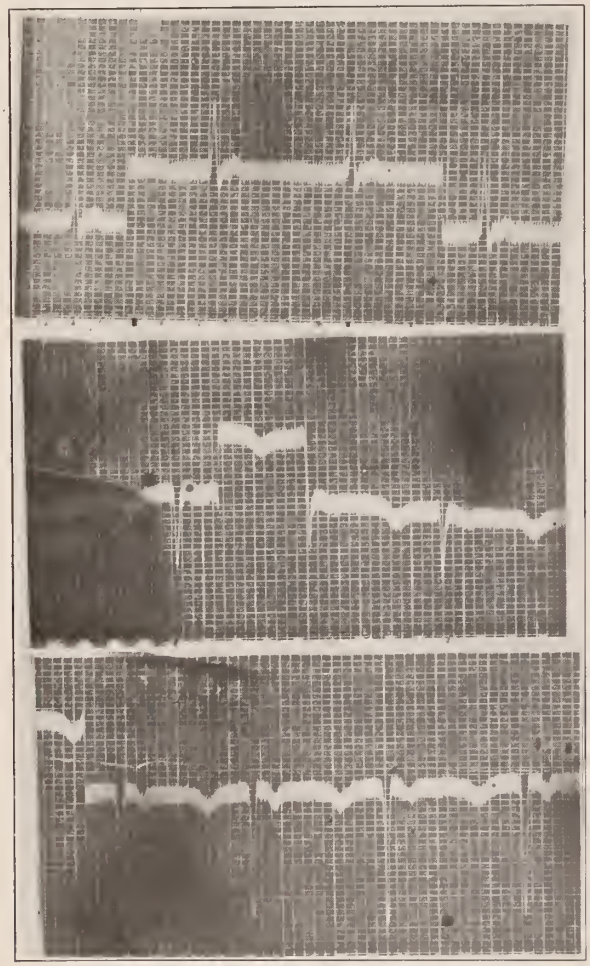


FIG. 5.—There is moderate left ventricular preponderance. Lead 3 shows an inverted P_3.

gram were M.L. 10.1; M.R. 5.0. Internal thoracic diameter 26. Aorta, second interspace, 6.9 cm.

This patient has reached that unfortunate stage where little can be accomplished for her. We can only try to make her comfortable, and give her mercury, bismuth, and the iodides. I am opposed to the use of arsenicals in such a patient. Her activities should be limited to comfortable effort only.

THE HEART IN INFECTIONS

Dr. Homer F. Swift[12] read a splendid paper on the heart in infections before the Congress of American Physicians and Surgeons in Washington in May, 1928. In diphtheria, he describes a waxy, fatty and hyaline degeneration of the heart muscle, followed by interstitial response; *i.e.*, edema, increased wandering cells, proliferation of fixed connective tissue. There is disproportion between the degree of functional disturbance during the acute attack and the small amount of residual organic or functional crippling. Early, clinically, we note tachycardia, subnormal intensity of sounds, and cyanosis and arrhythmias such as extra systoles, nodal rhythm and heart block, and occasionally auricular fibrillation. The outcome depends upon the relation of uninjured to injured muscle.

In scarlet fever, three types of reaction have been described—the toxic, allergic, and septico-pyemic. The toxic changes resemble those noted in diphtheria. There is bradycardia and cardiac weakness, cyanosis, and subnormal intensity of heart sounds. At this stage the outcome is practically never fatal, and histopathological descriptions are therefore lacking. The allergic changes usually occur from the end of the second to the sixth week after onset. The phenomena noted are adenopathy, recurring angina, nephritis, arthritis, and occasionally simple endocarditis. Lesions smaller than Aschoff bodies and containing no giant cells are found in the myocardium.

The septico-pyemic type is rare and occurs in those cases where the streptococcus scarlatinæ grows upon the heart valve, a form of malignant endocarditis.

Swift concludes that, with certain reservations, we may say that there are type lesions of the heart in infection: the first, toxic, as in diphtheria and early in scarlet fever; second, allergic, hyperergic or hypersensitive, found late in scarlet fever, in rheumatic fever and in syphilis; third, bacteremic biologically immune, as in subacute bacterial endocarditis; and, fourth, bacteremic, toxic and cachetic, as in acute septicopyemia.

MYOCARDIAL DEGENERATION ASSOCIATED WITH UTERINE FIBROMA

For many years there has seemed to be definite evidence of myocardial degeneration in patients with uterine fibroma. The evidence is not absolutely convincing, however, and I know of no controlled electrocardiographic studies.

MYOCARDIAL FATIGUE

Dr. Henry A. Christian[1] has recently described the "fatigued heart." It occurs at any age in patients who complain of great exhaustion or palpitation following slight exertion. They experience uncom-

fortable sensations with respiration. They are often sensitive to pressure in the region of the cardiac apex. The heart is normal in size. Sounds may be slightly snappy, cardiac rate is easily accelerated. There may be an occasional to frequent extra systole. The pulse has a tapping quality. There may have been antecedent infection, debilitating disease, over-fatigue in relation to occupation along with loss of sleep and possible worry.

THYROTOXIC HEART DISEASE

In this type of cardiac disease there is probably a combination effect due to fatigue as a result of the prolonged tachycardia plus a degeneration incident to the toxemia. The tachycardia is followed by myocardial exhaustion, atonia, dilatation, degeneration with impaired conduction, auricular fibrillation, and death. Congestive heart failure is not the rule. Cabot has called attention to the lack of cardiac muscle hypertrophy and the persistent thymus glands discovered at necropsy.

REFERENCES

1. Christian, Henry A.: Chronic Nonvalvular Disease of the Heart. *J. A. M. A.* 1928. 91:549.
2. Cabot, R.: Facts on the Heart. p. 764.
3. White, Paul D.: The Incidence of Heart Disease in Massachusetts. *Boston M. & S. J.*, 1927, 196: 689.
4. Wood, J. Edwin, Jones, T. Duckett, and Kimbrough, Roy D.: The Etiology of Heart Disease. *Am. J. M. Sc.* 1926. 172:185.
5. Harrison, T. R., and Levine, S. A.: Regional Distribution of Rheumatic Fever and Rheumatic Heart Disease in the United States. *South. M. J.*, 1924. 17:914.
6. Mosenthal, Herman O.: The Treatment of Essential Hypertension. *J. A. M. A.*, 1928. 91:698.
7. Gager, L. T.: The Incidence and Management of Hypertension. *J. A. M. A.*, 1928, 90:82.
8. McCulloch, H.: Rheumatic Heart Disease. *J. A. M. A.*, 1928. 90:2073.
9. Burnett, James: The Rheumatic Heart in the Child. Clin. J. 1926, 55:61.
10. Riesman, David K.: Acute Rheumatic Fever and its Variants in Childhood and Adolescence. *J. A. M. A.*, 1921, 76:1377.
11. Smith, E. S.: The Clinical Recognition of Cardio-Vascular Syphilis. *Am. J. Syph.*, 1920, Vol. 4.
12. Swift, Homer F.: The Heart in Infections. *Am. Heart J.*, 1928, 3:269.

THE MOST COMMON NEUROLOGICAL CONDITIONS ENCOUNTERED IN GENERAL PRACTICE *

By R. FINLEY GAYLE, JR., M.D.
Associate Professor of Nervous and Mental Diseases, Medical College of Virginia
Richmond, Va.

As a rule, a technical paper on a neurological subject arouses little interest in a heterogeneous medical group of this kind, comprised as it is of men doing all branches of medicine and surgery. For that reason we have chosen this subject, believing that there will be something touched upon to attract the attention of each of you and that it will probably stimulate some discussion.

We shall probably not be called to task when we say that at least twenty per cent of all sickness for which the doctor is called in attendance is of functional nervous origin. Hence, we shall first attempt to discuss, in a brief and very general way, the so-called psychoneuroses. A psychoneurosis is a functional nervous disorder of psychogenic origin which expresses itself in physical signs and subjective symptoms simulating disease. The difference between a psychoneurosis and malingering is that the former is an unconscious and the latter a conscious simulation of disease. There will be no effort in this paper to completely classify the psychoneuroses. The hysterias, major and minor, the so-called neurasthenia, and the anxiety states are the most common types met with in general practice. There is, unfortunately, a feeling among many medical men that the individual affected with a functional nervous disease is not really sick and they are told that there is nothing wrong with them. Patients are talked to in just such language, their symptoms laughed off; they are given a sedative and told not to worry. The handling of psychoneurotics in this manner, if the condition is at all profound, is rarely of benefit and is frequently harmful. They make a temporary adjustment to their troubles, but it is seldom of long duration.

A psychoneurosis is the physical expression of mental repressions, mental conflicts, and mental maladjustments. To correct disease we must always relieve the underlying cause. Therefore, in the handling of functional nervous disease it is necessary to understand the whole psychic make-up of the patient. For this, psychoanalysis is necessary. By psychoanalysis we do not mean the strictly Freudian type of analysis, but simply to allow the patient to review experiences of their whole lives and unburden all their innermost thoughts and secrets. Oftimes the patient is unconscious of the fact that certain experiences or acts of his, which he had thought forgotten but which were simply buried in the subconsciousness, are brought to the surface and are found to be the motivating factor of the disease. We try to forget unpleasant experiences, and often we think we have, only to be convinced later that they have simply been buried and repressed into our subconscious mind.

The individual with major hysteria is an interesting problem and is more easily recognized than

* Read before the Cabell County Medical Society at Huntington on May 10, 1928.

certain other types of the psychoneuroses. The major hysterical seizure is not infrequently mistaken for *grand mal* epilepsy, but there should not be great difficulty in differentiating them. The nervous background, the precipitating factor, the dramatic setting, the obvious display of emotionality, the lack of true unconsciousness, the type of convulsions, the absence of tongue-biting, frothing, and incontinence, as well as the long duration of the attack, are greatly in favor of a psychoneurosis rather than epilepsy. Other types of major hysteria which are not infrequently seen are the functionally blind, deaf, dumb, amnesic, paralyzed (motor and sensory), stammerer, and others. These are recognized as not of organic origin by the lack of objective physical findings and by their mental make-up. A type of patient which arouses much sympathy is the one with amnesia of hysterical origin. He, as well as the other types of this group, desires to get away, at least for a time, from his conflict. To lose one's identity and to wander from place to place creates a dramatic setting, arouses sympathy, and attracts the attention to the individual that he often desires.

Cases of so-called minor hysteria are much more difficult to be certain of in diagnosis. They are the so-called "neurotics" who are unstable emotionally, who complain of various (and most often vague) pains, but have a sufficient number of objective as well as subjective symptoms to keep one puzzled as to the real diagnosis. Their pains simulate almost any disease and the ones most puzzling are probably those with intraäbdominal symptoms. There are innumerable women operated on for intraäbdominal diseases whose pathology is psychogenic; on the other hand, those o fus doing neurology may overstress the functional side of a nervous woman and not allow her to be operated on when she probably should be. These cases can not be studied too thoroughly, both from the standpoint of organic disease and psychogenesis.

The anxiety neuroses are really borderline psychoses. They are the high-strung, nervous, restless, anxious, apprehensive, fearful type who worry constantly and do not sleep. Their basis is usually a subconscious fear, and this disease, when at all profound and of long duration, is, as a rule, the immediate forerunner of (or should be a warning of) a psychosis of the manic depressive type. The prognosis is not quite so good for early recovery in this type.

According to the newer conception of the psychoneuroses, there are now fewer cases diagnosed as neurasthenia. This diagnosis was formerly, and is probably to a large extent among general medical men now, made in practically every nervous case. It was, so to speak, a dump heap for all cases in which a diagnosis of a physical disease could not be made. It is now believed that neurasthenia is quite an unusual and rather infrequent disease. The symptom complex is rather definite and the symptoms quite clear-cut. They are, briefly, profound physical and mental fatigue cases with insomnia. There is not the striking mental depression with extreme emotionality, vague, indefinite pains, and other symptoms which were formerly thought to accompany this disease. These symptoms are usually the expression of a mild manic-depressive personality or of a state of anxiety or some other twilight mental disorder.

Aside from mental disorders, which will be discussed later, the most common neurologic disease next to the psychoneuroses is syphilis of the central nervous system. The various pictures which this malady presents can not be gone into in this type of discourse. The disease as a whole will be discussed, with the exception of tabes dorsalis and general paresis of the insane, which will be mentioned in a later paragraph.

Syphilis of the central nervous system causes symptoms in that part of the body supplied or controlled by that part of the central nervous system affected by the disease. The pathological process may be localized, disseminated or diffuse. If this be visualized, it is not difficult to realize that this disease may cause almost any combination of symptoms and it may simulate almost any known disease. When syphilis is suspected, either from the history of an initial lesion, the physical fiindings, or for any other reason, one should not be discouraged in his diagnosis simply because the Wasserman or Kahn test on the blood serum is negative. Frequently the spinal fluid is positive in central nervous syphilis and the blood serum negative to the complement fixation tests. It is our custom to treat with salvarsanized serum, by the Ogilvie method, those cases of central nervous syphilis with positive spinal fluid Wasserman tests and increased cell count. This is given in combination with intravenous salvarsan and spinal drainage.

Because of the fact that they are degenerative diseases of the central nervous system, tabes dorsalis and general paresis are not curable in the strictest sense. However, the diagnosis of either of these two conditions should not deter one from actively treat-

ing these conditions, because, in the inflammatory stage of the disease before much degeneration of the tissue takes place, the condition can be definitely benefited, arrested, and sometimes be made practically symptom-free by active anti-syphilitic therapy. Fever-producing agents such as malaria, milk injections and typhoid serum are now being rather extensively used with encouraging results. Tryparsamide is beneficial to a certain number of paretics, but its use is limited because of the contraindications to its use in certain eye conditions. A therapeutic measure greatly neglected in the treatment of tabes dorsalis is the employment of exercise of reëducation. Many apparently hopeless ataxics are made to walk with a fair amount of certainty by the use of exercises of precision and other exercise methods.

The incidence of chorea in children is very common in general practice, and we have found that the more profound and complicated ones have frequently not received proper treatment early. Chorea is usually associated with rheumatic fever and endocarditis. We seldom see cases of Sydenham's chorea in which there is not some involvement of the endocardium. The pathological changes found in chorea in the nervous system are as varied and numerous as those who describe them. The literature has been thoroughly reviewed and some investigators could find no changes in the brain. Starr considers the disease a functional one and regards the pathological findings in the nervous system as secondary changes. Others believe the disease to be a neurosis of which toxemias, infections and emotional stresses are exciting causes. Rungé points out that most of the psychoses occurring in chorea are similar to those seen in infectious psychoses and that weight must be given to the theory of the infectious origin of the disease.

Most of those who have done any investigative work are of the opinion that the disease is infectious, but that it does not produce gross lesions in the nervous system. Rosenthal has produced choreiform movements in experiments on animals by stimulation of the motor cortex with chemical poisons, especially creatinin. Dickinson found a hyperemia of the brain and cord with minute hemorrhages into the brain in chorea. Hutcheson, Clark, and others are of the opinion that lesions in the spinal cord are responsible for the choreiform movements. They base their opinion upon the anemia and proliferation of connective tissue which they found in the upper part of the cord. Horatio Wood, as a result of experiments in animals, believes that the pathology of chorea is a change in the nutrition of the ganglionic structures of the entire cerebrospinal axis, and that this change in nutrition may in some cases fail to develop structural changes sufficiently marked to be detected by the microscope. Others have found a degeneration in the nerve cells of the central ganglia, particularly in the lenticular nucleus. The most popular belief in recent years is that chorea is an organic brain disease due to encephalitis. Those holding this view believe that chorea is an expression of the mild, acute, curable infectious encephalitis, and that almost any infectious disease may provoke it. The conception that chorea is due to encephalitis is not new, for Hughlings Jackson, as far back as 1864, spoke of chorea associated with fatal cases of acute rheumatic fever as meningo-encephalitis.

To sum up, the etiology and pathology of chorea show that there is no uniformity of opinion as to the pathogenesis of the disease. The evidence points to the probable toxic or infectious origin of the disease, whatever this agent may be, whether infectious or toxic or both has not been demonstrated. The toxin seems to have a predilection for nerve, joint and cardiac tissue, just as the toxic agent in Wilson's disease has a predilection for the lenticular nucleus and the hepatic cells. There seems little doubt of the fact that chorea is a brain disease (encephalitis), the exact causation for the motor phenomena of which has not been definitely determined, but that it is most probably due to involvement of the basal ganglia.

Due to the conception that the disease is an acute encephalitis, it has been suggested and put into practice by some physicians to inject autogenous serum intraspinally. In view of the fact that this procedure has been beneficial in other forms of encephalitis, to our mind the theory is tenable. However, there are no cases of simple Sydenham's chorea in our practice that have not recovered by less radical procedures, and we are loathe to advise this type of therapy.

It is our opinion that the one therapeutic agent which is head and shoulders above others, in the treatment of this disease, is complete rest and isolation of the patient. This, together with the usual hygienic measures in the treatment of any acute infectious disease and small doses of luminal, chloretone or some other mild anti-spasmodic is given. Salicylates are also used. It is, as a rule, unwise to remove foci of infection, such as infected tonsils and teeth, until the patient's acute condition has thoroughly subsided.

A distressing symptom to the patient's family, seen in the severe cases of chorea, is that of paralysis

of one or all extremities. A most frequent complication is hemiplegia. The prognosis of this paralysis is practically uniformly good. Hot packs are extremely beneficial in the treatment of these cases.

Any one who is looking for the one cause of all epilepsy might as well stop looking. Epilepsy is a symptom of many disorders, and it seems that epilepsy is not due to any one cause but to a multiplicity of causes. Dentition, worms, adhesions of the prepuce, and others, may cause convulsions, but the majority of children that have these conditions do not have convulsions. There must be a brain factor in the production of all convulsions. About twenty-five per cent of all mentally defective children have epilepsy, and we rarely find epilepsy in children of strong, healthy parents, except those who have had some cerebral trauma due to accident, hemorrhage, forceps delivery, meningitis, or encephalitis.

There is much controversy as to the immediate cause of the epileptic attack. Jackson thought the attack due to a sudden violent discharge from a nerve center, psychic, sensory or motor, due in turn to congestion in the cortical capillaries. Others think the underlying factor of an epileptic fit to be cerebral anemia. Elsberg, while doing a brain operation under a local anesthetic, observed blanching of the motor cortex during a convulsion.

Epileptoid convulsions may occur at any period of life. Those cases beginning in childhood and continuing through youth are usually the ones which show the most progressive changes and which are the most hopeless. Birth trauma, with resulting hemorrhage in the brain, is probably the most frequent cause of epileptic attacks. In the routine examination of a child with convulsions one should look especially for impacted teeth, adhesions of the prepuce, worms, errors in diet, and syphilis. After thirty years of age we should think particularly of alcoholism, syphilis, general paresis, encephalitis, and brain tumor. Late in life we think of arteriosclerosis, nephritis, and apoplexy. Heredity is not now thought to be the great factor in the production of epilepsy that it once was. It is our belief that many cases of epilepsy are due to some brain trauma; for instance, after a severe fall there are small hemorrhages produced by the trauma which give rise later to scar tissue or organization with adhesions of the meninges which may produce the convulsions. The syphilitic type of epilepsy is the most hopeful, so far as prognosis is concerned, unless these convulsions are associated with general paralysis. There is usually an exudative form of central nervous syphilis which responds readily to salvarsan. Endocrinopathies are generally believed to cause a considerable amount of epilepsy. Unfortunately, there is not sufficient proof that disturbance of a certain ductless gland is the cause of a convulsion. However, we do know that disturbance of the pituitary, especailly, and sometimes of the thyroid and other glands of internal secretion, apparently cause the symptom complex of epilepsy. There has been some work done recently at St. Elizabeth's Hospital in Washington in producing a ketosis in epileptics. They found that patients in a mildly acidotic state had fewer convulsions than when their blood was in an alkaline state. For this reason they have given a series of epileptics a considerable amount of acid in their diet with some improvement. They felt that the improvement in the so-called starvation diet in epilepsy was due to the creation of ketosis. McCready has recently done some work in reference to the allergic phenomena of foods. All of his patients are tested out and those foods to which there is a positive reaction are eliminated. He claims good results in a number of cases.

Luminal is still the drug of choice in the treatment of idiopathic epilepsy. It is well to give a sufficient amount of the drug in the beginning to control the attacks and then reduce it to the minimum amount on which the attacks may be controlled.

Encephalitis is a disease which is undoubtedly more frequent now than before the influenza epidemic in 1918. Formerly it was, no doubt, often undiagnosed, due to its infrequency and also to the unfamiliarity of of the profession with the symptoms of the disease. Acute encephalitis is not always accompanied by drowsiness and lethargy, as is the popular conception. It is unfortunate that the disease was termed "sleeping sickness" during the first part of the epidemic, because sleeplessness is almost as common a symptom as drowsiness. Cranial nerve involvement is practically always encountered, and for this reason double vision is one of the earliest complaints. Masked expression, headache, muscle rigidity and tremors of the extremities and of other muscles are common findings. Mental symptoms of confusion, delusions and others are often a part of the picture. In the acute stages of the disease a rigidity of the neck muscles and a doubtfully positive Kernig's sign may confuse the diagnosis with meningitis. The spinal fluid findings of a moderately increased cell count and the absence of bacteria in the fluid usually clears up this doubt in the diagnosis. Early in the disease there is practically always

meningeal involvement and the condition is then really a meningo-encephalitis. Spinal puncture should always be done both from the diagnostic and the therapeutic standpoint. The fluid is under increased pressure and the lowering of pressure often gives relief of headache and other annoying symptoms. In the acute and subacute stages of the disease we have found autogenous serum, given intraspinally, to be beneficial in shortening the duration of the disease, relieving symptoms and tending to minimize the sequelæ which are most distressing.

The aftermath of acute encephalitis is probably the most dreaded stage of the disease. The so-called Parkinsonian syndrome, which consists of non-intention tremors, expressionless face, extra-ocular palsies, drooling of saliva, monotonous speech, hypertonicity of muscles, change in gait and posture with gradual mental and physical enfeeblement, is a chronic progressive condition for which no relief can be had. A very small number of these cases do not seem to progress very rapidly, and a certain number of them seem to be somewhat benefited by autogenous serum intraspinally. There is no controversy now about the pathology being chiefly located in the basal nuclei in all these cases.

Paralysis agitans is also a chronic encephalitis. It occurs in older individuals and is likely due to the toxic influence of chronic infections on the basal ganglia. This disease is not the result of alcohol or syphilis, but is so often found in pious old men and women that it has been said to be a reward of virtue.

Neuritis is the most maligned of the neurological diseases. Every pain in a muscle, regardless of its character or extent, is carelessly called neuritis by the laity and too often by the profession. This disease, in its true form, is not so common as is supposed. The clinical picture is clear cut. In a true inflammation of a mixed nerve there is always an objective sensory skin change as well as subjective sensory disturbance, with muscular weakness and later atrophy of the muscles. If the nerve is purely motor there is, of course, only the muscular weakness and atrophy; if purely sensory, the findings are only those of sensory changes such as pain. Examples of the former are the wrist drop of lead poisoning and Bell's facial palsy; of the latter, trifacial neuralgia.

Herpes zoster is a radiculitis or a neuritis of the posterior spinal ganglia. The sensory symptoms and the vesicles on the skin being practically the sole symptoms. The chronicity of the pain after the disappearance of the vesicles is most annoying to the patient and very trying on the physician. It is particularly important not to give a prognosis of a speedy relief of this pain, especially in elderly people. The diagnosis of this condition is sometimes confusing because of the late appearance of the vesicles. The type of the pain without objective findings suggests various intrathoracic and intraäbdominal conditions.

Meningitis, in its various forms, is a common condition met with in any practice. The classical symptoms are recognized by every one. It is important to diagnose, as early as possible, the type of organism causing the disease, for upon this fact depends the therapy. Every one knows that in the meningococcic type the prognosis is fairly favorable if antimeningococcic serum is administered early, both intravenously and intraspinally. The tuberculous variety is uniformly fatal, although St. Luke's Hospital in New York reported, several years ago, the recovery of six cases of tuberculous meningitis as the result of the administration of antimeningococcic serum. This procedure has been tried in several cases by us without any favorable effect upon the course of the disease. The streptococcic and staphylococcic varieties of meningitis are almost always fatal. Recently there has been done, by Dr. C. C. Coleman and others, ventricular and cisterna magna drainage with encouraging results.

Disseminated or multiple sclerosis is very likely a much more common disease than is believed. The transient symptoms of blindness, ataxia, paresthesias, and others early in the disease, as well as the complete remission of all symptoms for varying lengths of time, frequently make the physician believe the case to be hysteria.

Infantile paralysis is probably the most difficult neurological condition to diagnose early unless there is an epidemic of the disease in the community. The initial symptoms of temperature elevation, nausea, vomiting, diarrhea and prostration in a child are such common early symptoms of most childhood diseases as not to arouse suspicion of poliomyelitis. It is only later, when paralysis of one or more extremities is encountered, that this malady is suspected. The pain in the muscles involved is sometimes confusing and this condition is not infrequently mistaken for multiple neuritis. When poliomyelitis is diagnosed, the most important therapeutic procedure is absolute immobilization of the affected part. Plaster is the method of choice. We have learned much from the orthopedic surgeon about the care of poliomyelitis. In the acute febrile state of the

disease frequent spinal drainage is the procedure which relieves the headache and other symptoms due to an increase in the intracranial pressure. During the epidemic in 1916, in Philadelphia, it was found that those cases which had frequent spinal drainages during the acuteness of the disease improved more rapidly and had less resulting paralysis than those treated by other methods. Rosenow's serum, which was at one time thought to have some value in the treatment of infantile paralysis, has practically been discarded.

Tetanus is not difficult to recognize. The one point to bring out is the value of intraspinal antitetanic serum. Many physicians do not think it necessary to administer the serum by this route. Some one has suggested the beneficial effect of paralyzing the masseter muscles with cocaine so as to relieve the lockjaw and allow the patient in the extreme cases to be fed by the mouth rather than by the nasal tube or by other methods which are frequently necessary because of the masseter muscle spasm. Magnesium sulphate, which has recently been employed by some in the treatment of this disease, has not been used in our practice, but is thought by a few to be helpful in the treatment.

Spinal-cord tumors are relatively rare, but, no doubt, many of them go undiagnosed. Pain is a constant finding unless the tumor involves the motor pathways alone. Some few cases of this type have been reported. Reflex changes, the locating of muscle atrophy, sphincter involvement, and a level of skin sensory disturbance corresponding with the segment of the cord involved are helpful findings in localizing the tumor. Double sciatica is most often due to a tumor of the cauda equina. The presence of a spinal block, partial or complete, as determined by the positive Queckenstedt's sign, and the presence of xanthrochromic spinal fluid are corroborative findings in the diagnosis of spinal-cord tumors.

The subject of brain tumors is too large to allow me to go into any detail in this discussion. Any persistent headache for which a cause can not be determined should make one suspicious of this disease. Vomiting of the projectile type, slow pulse, localized convulsions or other signs of focal brain involvement, unilateral weakness or paralysis, blindness, or choked disc, uncinate attacks, aphasia, amnesia, cranial nerve palsies or mental symptoms in almost any combination should make one think of a cerebral new growth. In the presence of a suspected brain tumor great care should be taken in the performance of a lumbar puncture. Certainly this diagnostic procedure should not be attempted when the growth is suspected in the posterior fossa for fear of causing a cerebral herniation through the foramen magnum. Air injections with ventriculograms are frequently of great diagnostic value.

For some unknown reason, the name of the mental disease most familiar to the majority of the medical men is dementia præcox. Mental patients of all types are sent for consultation, tagged by their physicians with this diagnosis. This disease is essentially a disease of young people, and in that it is a dementia it is characterized by mental deterioration. Usually there is a history of a precocious youth who rather suddenly shows personality changes. He becomes asocial and of the shut-in type; he tends to assume postures, develops stereotype movements; his thought processes become slowed, suspiciousness is noticed, he talks to himself, day-dreams, develops hallucinations (both visual and auditory), delusions (of persecution and others), becomes apathetic and untidy, loses his emotional tone and gradually deteriorates mentally. The course of the disease is progressive and, sooner or later, most of them become institutional cases. Occasionally, a partial or complete remission will occur, but, should this happen, the expectancy is for the symptoms to recur.

The manic depressive psychosis is one in which the prognosis is almost uniformly good. This disease is characterized by rises and falls in temperamental personality. The older classification of the psychosis described the elevated or exalted period of the disease as "mania" and the depressed period as "melancholia." We now think of them as different phases of the same disease. Some individuals have recurrent periods of depression and others of mania. Then, again, a person may alternate the two phases and sometimes go from one phase of the disease directly into the opposite one. There is also encountered the mixed manic depressive type which has both the elevation and depression, and another type known as the agitated depressive type. There is no known etiology of this psychosis or of dementia præcox. Various stresses and strains, worries, and psychic trauma precipitate attacks of this disease, but it is believed that they are not the underlying cause. Elderly people and women at menopause are particularly subject to this psychosis, but it may occur at any age. The older the individual the less hopeful the prognosis in this condition. Many elderly people with this disease are mistakenly diagnosed senile dementia; their recovery is sufficient proof of the

error in diagnosis. Mental deterioration does not accompany the manic or the depressive psychosis unless the condition is present over a great many years.

Paranoia is a dementia which is progressive. Its striking symptom is morbid suspiciousness which gradually grows into delusions of persecution. These patients retain their intellect a long time and are very difficult types of cases to commit to an institution because of this retention of intellect.

There is a group of mental misfits which are classified as psychopathic inferiority. These are those of fair intellect with weak volition and unstable emotions. They are the inadequate personalities, pathological liars, paradoid personalities, petty criminals, alcoholics, drug addicts, and the like. They are difficult problems to handle becuase they are not insane, but they should have institutional and custodial care. We have recently established in Virginia a farm for this class of psychotics, known as the Farm for Defective Misdemeanants, where they can be committed from the courts or transferred from the state hospitals or from the penitentiary.

In this general review of neurologic problems it has been impossible to go into any amount of detail of the various conditions mentioned. We have probably also not mentioned many conditions which you may think more important than some to which we have given time. To our mind, the above are those which are most perplexing and are most commonly encountered in the practice of medicine.

DIAGNOSIS AND TREATMENT OF GONOCOCCAL INFECTION IN THE FEMALE *

By PHILIP JOHNSON, M.D.
Fairmont, W. Va.

The Fairmont State Hospital treats the inmates of the various state institutions in this section, including the Industrial Home for Girls at Salem. All of the girls there who have venereal infections are sent to the state hospital for treatment. Through this arrangement we have an ideal condition for treatment, inasmuch as we can regulate diet, hygienic measures, and therapy. In this paper I shall attempt to give you some of our observations that have been found of value.

Gonorrhea causes more widespread suffering among women than any other disease. Practically every tissue in the genitourinary tract may be involved in this disease. The diagnosis of gonococcal infection in the female, judging from the clinical signs and symptoms alone, is probable only in a small percentage of cases. Only by the finding of the gonococcus is it possible to arrive at a definite conclusion as to the presence or absence of a gonococcal infection. In fact, a diagnosis, control of treatment and a statement of cure all depend upon the bacteriological findings. The importance of bacteriological diagnosis is therefore supreme.

In taking the specimen care should be exercised that there is as little admixture with the surface organisms as possible. Therefore, before specimens are taken from the urethra, the meatus should be cleansed; and before taking them from the cervix the external os and the cervical canal should be thoroughly cleaned out.

A wooden applicator, wrapped for about two inches of its length with a very thin layer of long-staple cotton wool, previously sterilized, makes the best instrument with which to procure the specimen. To take a specimen from the urethra after the meatus has been wiped with sterile cotton, a probe is inserted for a distance of three-quarters of an inch, rotated, and withdrawn. To take a specimen from the cervix, the vulva is cleansed, a self-retaining speculum inserted, and the cervix exposed. The external os is carefully cleaned with cotton and then several probes are used to clean out the cervical canal. When the canal has been made as free of secretion as possible, a fine probe is inserted and rotated, while pressure is made upon the cervical wall to cause secretion to exude from the cervical glands. This material is then placed upon a slide and stained with Gram's or methylene blue. Three negative specimens should be required as evidence of a clinical cure, one being taken after a menstrual period.

A brief review of the anatomy and histological structure of the parts affected will give us a better understanding of the problem we have to combat.

The urethra is, in the greater number of cases, affected because the epithelium of the meatus is in the female, as in the male, an extremely favorable medium for the growth of gonococci. Skene's glands are small, secretory structures situated on each side of the meatus. The ducts of these glands have minute exits near the meatus, and, when infected by the gonococcus, exude a creamy pus. Bartholin's glands are two racemose glands situated one on each side of the posterior commisure of the

* Read before the November meeting of the Marion County Medical Society at Fairmont.

vaginal orifice. Bartholin's glands may be infected primarily, but the infection is usually secondary to infection elsewhere, especially in the urethra.

The vagina is not commonly affected in adults, but is mostly found in the form of vaginitis in young girls. The mucous membrane of the cervix is very different from that of the fundus. In the endocervix the membrane is composed of complicated racemose glands, with small ducts emptying into the cervical canal. The epithelium lining the cervical glands is of the high, cylindrical goblet cell type. Toward the internal os the mucous membrane becomes modified, the glands less arborescent, and the high cylindric epithelium becomes lower in type. The endometrial mucous membrane consists of simple tubular glands, lined with low cuboidal epithelium. We thus see that the endocervix and the endometrium are unlike. They also differ in the manner in which the same infection may infect them. The endometrium seems to be peculiarly immune to what may be called a permanent infection of gonorrhea, but serves as a bridge between the cervix and the tubes. Tubal infection is very common and is usually bilateral. This is the most common cause of sterility.

The treatment of an average case of gonorrhea varies widely with the physician. There are several different courses of treatment which, if followed with persistence, will result in a clinical cure. Treatment may be divided into four classes, as follows:

1. Chemical.
2. Cautery.
3. Diathermy.
4. Surgical.

Some men use iodine, others argyrol, others silver nitrate, and still others mercurochrome or acriflavine. The fact that such a large percentage of these patients are eventually operated upon indicates that the usual procedure proves unsuccessful in the larger percentage of cases, even granting that the cases are seen early after infection. Mercurochrome 220 in one or two per cent solution was used, but seemed, to most physicians, to be of no marked benefit. Brady recommends, for chronic gonorrheal endocervicitis, painting the entire endocervix with mercurochrome. It causes less local reaction, he says, than either iodine or ten per cent silver nitrate. We have found mercurochrome very satisfactory. It has remarkable sticking properties, and when applied to injured tissue it is much more slowly washed away by the natural discharge than are most antiseptics.

Acriflavine is a powerful dye of the acridin series. As now prepared, it is soluble one-to-twenty in water, and in glycerine, one-to-three. Its penetrating properties are self-evident, owing to its staining properties. It is an active gonococcide, killing the organism in one minute. It is used in the cervical canal, in the strength of 1–500; in the urethra 1–1000. A cotton tampon, soaked in glycerine and icthyol, is left in the posterior fornix for twelve hours. This tends to promote free drainage.

On admission the patient is put to bed and a douche of 1–1000 potassium permanganate is given four times a day for the first week. Patient is then allowed out of bed. The second week one drachm of iodin to a quart of water is used three times a day, and the third week twice a day with permanganate. The douches are continued, alternating from permanganate to iodin daily for the remainder of the treatment.

Cautery.—After a patient has been treated a reasonable length of time and the only remaining pathology to be seen is the profuse cervical discharge, a cautery, heated to a cherry red, is used. This is inserted into the canal and several radial incisions are made in an endeavor to destroy the deeply hidden infection in the cervical glands. If there are nabothian follicles present they are punctured with the cautery. This procedure can be carried out in the great majority of cases without an anesthetic.

Diathermy.—An electrode, shaped like a straight hollow sound, tapering at the end and containing a thermometer by which one can accurately measure the temperature of the electrode, is inserted into the cervix. The positive electrode is placed over the abdomen. When the current is turned on there is heat generated between the two poles. This is allowed to remain in the cervix for twenty to thirty minutes at a temperature of 114 degrees Fahrenheit. (Gonococcus will not live at a temperature of over 108 degrees Fahrenheit.) The treatment is always followed by a profuse cervical discharge, and, in some cases, a pronounced slough is noted. Treatments are given weekly; slides are made before and after with no appreciable difference noticeable aside from the increased discharge. We could see no marked benefit.

Surgery.—When the infection has reached the tubes it is necessary to remove one or both tubes in a large percentage of cases, but not until the acute stage has subsided, being treated meanwhile by absolute rest in bed, ice-bags to both lower quadrants, bowels kept open, and patient kept in Fowler position without temperature for from a week to ten days. In old cases, where the cautery has not cleared

up the discharge, it is necessary to amputate the cervix, removing all the diseased glands. Infected Bartholin and Skene glands may be irrigated with mercurochrome or acriflavine, using a blunt-tipped syringe, and, if there is definite pus formation, they are aspirated or incised or dissected out.

PERFORATED GASTRIC AND DUODENAL ULCER *

By C. B. PRIDE, M.D.
Morgantown, W. Va.

Perforated gastric and duodenal ulcers are not uncommon. There is no other condition where an accurate early diagnosis is more important. In this paper no effort will be made to differentiate ulcers of the stomach from those of the duodenum. Most ulcers occur in the lower part of the stomach and the first part of the duodenum. Ulcers occurring here will be referred to as peptic ulcers or as gastroduodenal ulcers. Quite often, even at operation for perforated ulcer, it is impossible to tell whether the ulcer is in the stomach or the duodenum.

The cause of ulcers has been discussed in detail. The hydrochloric acid of the stomach is evidently responsible for many ulcers. Quite often we see, however, patients with a typical ulcer history, and when a gastric analysis is done the hydrochloric acid content is normal or below normal. On the other hand, quite often we see an increased hydrochloric acid content in patients who have no symptoms of ulcer. The medical treatment of ulcers, in general, is not very satisfactory, and one should be very conservative in surgical intervention. Ulcers may recur even after they respond to treatment, whether medical or surgical.

Some very interesting research work on ulcers has recently been done by Mann and Morton of the Mayo Clinic. Mann suggested that if the bile and pancreatic juices, both of which are alkaline, could be shunted into the intestine at a lower level, it would leave the hydrochloric acid unneutralized, and if the hydrochloric acid was an important factor in the causation of ulcer, it would produce ulcers in the duodenum. Out of this idea resulted the operation which is known as the surgical duodenal drainage. Dogs were used in the experiments.

A segment of the duodenum was severed at the stomach, and, five or six inches distal to this, severed again. This segment contained the duodenal contents, namely, bile and pancreatic juices; the blood supply of this portion of the duodenum was not disturbed. The upper and lower ends of the segment were inverted. About two inches and proximal to the lower stump a side-to-side anastomosis was made with the ilium about twelve inches from the cæcum, and an end-to-end anastomosis was done on the two remaining ends, thus making the gastrointestinal tract patent. After this procedure the pancreatic juices and bile entered the ilium instead of the duodenum, about twelve inches from the cæcum, and the hydrochloric acid of the stomach entered the duodenum where there was no bile or pancreatic juice. This procedure is a major one and the mortality from the operation is high. Every dog on which this operation was done developed an ulcer on the remaining duodenum which was joined to the stomach, from two weeks to six months after operation.

At the medical school Dr. Bonar and myself did six surgical duodenal drainage operations that were successful. All six developed ulcers of the duodenum in from two weeks to several months after the surgical duodenal drainage. Autopsy was done on all the dogs and the ulcers examined. They were emaciated and two or three bled per rectum quite profusely before death. One of the most interesting cases in our series was a perforated ulcer in a dog that had this operation; death was due to peritonitis. This perforated ulcer was about two centimeters from the anastomosis on the duodenal side. The perforation was about the size of a pinhead and the ulcer was of a chronic type, and was about one and one half centimeters in diameter.

Why some ulcers perforate and others do not can not be answered. The perforation nearly always occurs in the first one and one half inches of the anterior or superior surface of the duodenum, and on the stomach they are found more often on the lesser curvature down fairly close to the pylorus. When one searches for these perforated ulcers at operation the landmarks are quite often obliterated at the pylorus and usually the pyloric vein can not be identified. Usually, perforation is from two to five millimeters in diameter—simply a punched-out hole in the crater of an ulcer. The induration may be quite deep and extensive.

There is probably no condition that has a more sudden onset than a perforated peptic ulcer. Nausea and vomiting are present in some cases. The patient presents a picture of a very acute abdomen. The severe agonizing pain, constant in character in con-

---

* Read before the Monongalia County Medical Society, February 5, 1929.

tradistinction to the colic-like pain of cholecystitis, intestinal obstruction or renal colic, comes on out of a clear sky and causes the patient to call a physician. Frequently, when the patient is seen his legs are flexed on the abdomen. The pain is more severe in the upper abdomen, particularly at first. Examination reveals a rigidity which has been described as board-like. Percussion shows the absence of liver dullness in quite a number of cases. This, of course, depends upon the amount of air that escapes through the perforation. Ordinarily, the patient is not shocked to any marked extent. At the time of examination the patient is so concerned about his present condition that he gives a previous negative stomach history; but after he is relieved of his pain he quite often will give a history of having had previous stomach disorders, and a fairly large number of cases will give a typical ulcer history. The causation of the terrific abdominal pain is due to irritation of the parietal peritoneum by the contents that escape through the perforation. If the opening is very small, quite often, after the escape of a small quantity of fluid, it is sealed off by the omentum, and no doubt it is possible for the patient to recover without surgical intervention. Nature makes a gallant effort to close these openings. The intestines and omentum become adherent, to a certain extent, to this diseased portion of the intestine, just as they do to a ruptured appendix. The white count, pulse, and temperature are usually elevated but very little.

Immediately after a perforation takes place is the period of contamination, and by this we mean the soiling of the peritoneum by the stomach contents. Several hours after the perforation is the second stage, which is known as the stage of reaction. Nature has poured out fluid to dilute the contents and the abdomen quite often becomes softer and the shock, if any, seems to improve and the pulse subsides. It is not uncommon for the patient to say that he is better, even though he has received no opiate. If a patient is seen in this period the diagnosis is a more difficult problem, and it is here that the x-ray may be an aid in arriving at a conclusion. In any perforation a certain amount of air escapes into the abdominal cavity, and the x-ray will show whether or not air is present, and the place it accumulates is between the liver and the diaphragm. When seen in this stage the condition may simulate acute appendicitis. Quite often the tenderness is more marked over the region of the appendix and there is more rigidity in this region than elsewhere. Sir Berkeley Moynihan makes this statement: "The clinical picture of appendicitis is copied with such accuracy that out of 49 recorded cases in 18 the first incision was made over the appendix after diagnosis of acute appendicitis had been made."

The third stage is the stage of peritonitis, and this usually comes on from three to five days after the initial symptoms. The contents in the abdomen in the first hours of the perforation are sterile.

The treatment of perforated gastro-duodenal ulcer is surgical. The sooner operation is done, the better—regardless of the patient's condition. If shock is present, an infusion under the skin can be given during the operation. A high right rectus incision is made. When the peritoneum is opened, stomach contents, quite often mixed with bile, together with air bubbles, escape. When air bubbles are seen one feels certain that a perforated ulcer is present. The lower part of the stomach and duodenum are then inspected. Sometimes the perforation is covered with fibrin and omentum, and is difficult to find. Usually the ulcer is found where the largest amount of fibrin is deposited. Occasionally, after the gastro-duodenal region is freed from the surrounding structures, the ulcer is not seen. In such a case, if pressure is made on the stomach it will cause the contents to escape through the perforation. It's a fortunate thing for the surgeon that the perforations are usually on the anterior wall of the stomach and duodenum.

When the ulcer is found, the procedure depends upon the size of the ulcer, its location, and the condition of the patient. In most cases simple closure of these ulcers, with or without resection, is the operation of choice. The ulcer is invaginated and covered with omentum as an extra reinforcement. If one thinks the ulcer might cause a stenosis, some form of pyloroplasty or a gastroenterostomy may be done. After an ulcer perforates, healing takes place rapidly. This fact has been observed in secondary operations for post-operative hernia and stenosis. The fluid in the abdomen is removed by sponges. In cases operated upon a few hours after rupture, the wound can be closed without drainage; but if these cases go ten or more hours before operation the safest plan is to use drainage of some form. A stab wound, through which a drain is inserted, may be made in the right lower quadrant. This seems to be of little value, because little or no drainage comes from this wound.

Individuals that die of perforated ulcer may be divided into three groups: First, those who die within three days, and in whom shock is the main factor in causing death; it is too early for peritonitis.

Second, those who die between four and ten days, death usually being due to peritonitis. Third, those who die from one to two months after perforation, called the abscess group. Usually these abscesses are subphrenic or within the liver, and the organisms gain entrance through the portal vein from the ulcer, by extension, or through the bile passages.

The post-operative treatment should be carefully carried out. One should always keep in mind that peritonitis may develop, or perhaps has already developed. A good plan is to give nothing by mouth for the first two days. Saline infusions of two to three thousand cubic centimeters daily should be given. On the third day a modified Sippy diet may be started and increased daily. Morphine will keep the patient comfortable and at the same time will check peristalsis. Should shock be present to any marked degree, blood transfusions may be given.

I wish to report two interesting cases, both being on the surgical charity service at the Monongalia County Hospital. The first was a man 32 years old. He gave a history of having had some pain in the epigastrium before his present illness. About three weeks before he was operated upon he had severe pain in his upper abdomen. At times the pain would subside, only to recur. He was sent to the hospital and examination revealed a large, tender mass in the upper right quadrant of the abdomen. The skin over the mass was indurated and red. He ran a septic fever, the temperature ranging from 99° to 104° F. The white blood cell count was 20,000. Under general anesthesia an incision was made over this mass. When the peritoneum was opened a large quantity of pus, discolored with bile, escaped. The abscess was well walled off, and it was thought inadvisable to do anything but drain. In all probability this abscess resulted from a perforated peptic ulcer. The fact that bile was present led us to this conclusion. It is very unlikely that a ruptured gall-bladder accounted for the condition. In any inflammatory tumor mass in the upper abdomen, one should keep in mind a perforated ulcer as the possible source.

The other case was that of a white woman, aged 45. Twenty hours before operation she was seized with severe pain in the upper abdomen. The pain was relieved somewhat by morphine, but the board-like rigidity remained. At operation a perforated ulcer was found in the first portion of the duodenum. Nature had plugged the opening, and even after the omentum had been removed from the duodenum one could not tell just where the perforation was located. There was quite an extensive indurated area. The stomach was squeezed from above downward and the pressure caused the opening to reopen and discharge stomach contents. The ulcer was excised and two rows of sutures closed the edges. This case is of particular interest because the patient was a woman. Perforations are seldom seen in women.

Conclusion.—Perforated peptic ulcers are seen quite often, and usually occur in men. The acute onset, the excruciating pain and board-like rigidity which persist are the major symptoms. The x-ray should be used in the cases in which there is some question concerning the diagnosis.

Surgical intervention is the treatment and should be done as soon after the diagnosis as possible, regardless of the patient's condition. The mortality is very low in cases operated upon within the first ten hours after onset and very high after twenty hours. The operation of choice is the simple closure. Ulcers that have perforated have a tendency to heal rapidly. Occasionally a secondary operation is necessary for the correction of a stenosis or the repair of a post-operative hernia.

Peritonitis is the chief cause of death, and every effort should be made to prevent its occurrence.

THE HEALTH OFFICER AND THE PRACTICING PHYSICIAN *

By C. A. RAY, M.D.
Charleston, W. Va.

Dr. Henshaw and Gentlemen: I assure you that I appreciate the invitation and privilege of a place on your program and an opportunity to discuss a subject which appears to me of vital importance. I have the honor of representing the whole profession of West Virginia this year as president of our Association, and have chosen for my subject "The Health Officer and the Practicing Physician." I have always been an advocate of public health regulation, and have never neglected an opportunity to promote its advancement and improvement. At the same time, as a practicing physician I have been extremely jealous of our rights and privileges, and what I shall have to say will be for the continuance of an amiable relationship, which will redound to the benefit of all concerned.

The maintenance of the health of our citizens is the most important subject facing our nation at this

* Presented before the Public Health Conference at Morgantown on November 27, 1928.

time. No industry, whether it be agriculture, mining, manufacture or transportation, can be operated efficiently or successfully conducted by men and women whose health is below par, and I repeat here what I said in a recent edition of our JOURNAL: We have been, and are now, working at the wrong end of the string. We should have a representative as Secretary of Health in the President's cabinet, and work from there down through state, county, and municipality.

The regulation of the practice of medicine by state boards of health has been a dismal failure, for in every state in the Union are to be found illegal practitioners, quacks and cults innumerable, pretending to cure the sick and filching the unfortunate victim out of his hard-earned income. In my home county and town there are, at this time, several men who are and have been practicing medicine without a state board license. In the state there are probably fifty unlicensed doctors practicing medicine, and the most unfortunate part of it is that they continue to come. I am not censuring the Health Department, for I am led to believe they are doing the best they can under existing circumstances. The great trouble is in law enforcement. I have advocated the appropriation of funds sufficient to employ an attorney for the state health department, whose duty would be to see that state health laws were enforced. We are all more or less negligent about complying with the regulations of quarantine, venereal diseases, prophylaxis, and immunization, and before we can be 100 per cent proficient we, as physicians, must do our whole duty. One of the weak points in our medical practice act is the matter of jurisdiction. It is almost impossible to get a conviction against an illegal practitioner, quack or culturist before a jury, no matter how flagrant the violation, even where death has resulted through neglect and malpractice. This has been tried and resulted in failure so often that we are not surprised at the reluctance with which officials undertake such prosecutions.

It is my opinion that if jurisdiction over these violations were in the power of justices of the peace, convictions would be much more easily obtained, and at the same time they could be enjoined from further violation or held for contempt.

As I understand it, the function of the county health officer, first of all, is educational. Teach the people how to live in order to preserve their health, and when they are sufficiently educated in these essentials we will not have so much trouble in having laws passed making it obligatory in the use of known methods of immunization, prevention, and necessity of quarantine. Heretofore the public has been led to believe that all health laws and regulations have been made for the sole benefit of the doctors. Legislators are covered up with petitions opposing every measure that is proposed for the public benefit. Cults and quacks spare neither time nor money in spreading propaganda that will defeat the purpose of scientific medical advancement, and every patient carries away from their offices something in their heads as well as in their spines that is detrimental to the health of some other citizen who has been unfortunate. Ethical doctors are no longer jealous or afraid of an ethical county health officer, and we join you in advocating these measures until every county in West Virginia will have proper supervision of the health of its citizens. The more teachers of health we have the sooner will we become educated. Few people hesitate now to take an immunizing dose of diphtheria antitoxin after being exposed to diphtheria, or to take typhoid vaccine when one or two of a family are stricken with the disease. The greatest menace to the health of the world today is heart disease—even greater than cancer and tuberculosis combined. Think of the number of those who could be saved years of suffering and live to a ripe old age by the simple removal of infected tonsils in early childhood, and the prevention of many other acute infections.

May I repeat: The more teachers you have the earlier and greater the dissemination of useful and life-saving knowledge. I want to be thoroughly understood that I am uncompromisingly opposed to the idea of state medicine. It will be a sad day for the people, as well as for the doctor, when any department of state government shall say to a doctor, "Your practice will be limited to a certain city, ward, or country precinct, and your salary will be such as the statute designates." If you desire a forecast of this condition, let me ask you to compare the professional ability of some men who are employed and paid a salary by many industrial corporations of our state with the reputation and skill of our leading physicians and surgeons who are devoted to their profession, to the extent of giving a great portion of their time and means to the altruistic side of their calling. I do not mean to imply that this is true of all industrial physicians, but there are enough in this class to show the tendency to drift away from the ideals of every young doctor as he leaves his Alma Mater.

When a contagious disease is called to your notice,

to do at once everything necessary to prevent, by quarantine and hygiene, further spread of the infection, and immediately notify the family physician and see that he is called by the family. There are extenuating circumstances, but, as a general rule, I am opposed to the practice of health officers and school physicians and nurses indiscriminately vaccinating and giving serums and antitoxins without the knowledge and coöperation of the family doctor. In my opinion, the closer we follow the rule of ethics the more agreeable will be our relations.

There is coming a revolution in the affairs of health. Society will demand some change in the prevention and cure of disease whereby the poor and middle classes may have the full benefit of scientific medical discoveries and an equal chance for recovery from disease as the rich, and at a price commensurate with their economic condition. How this is to be brought about is hard to tell, but this one thing, to my mind, is certain: If we are going to prevent state medicine and complete government control of all branches of medical practice, we must work together as health officers and physicians to the end that the public may receive justice without deterioration in the standard of practice or disintegration in the ranks of our profession. Ethical consideration of details in every question is the keystone of our structure.

I do not know how much a department of health, under the supervision of a member of the President's cabinet, would interfere with the War and Navy departments, but it does seem feasible to work out some plan whereby the office of Surgeon General of the Army or Navy could be dignified by making the holder a member of the cabinet and exercise control of the health of the nation.

We are familiar with what health regulation has done for men in these departments of the government, and it is not unreasonable to think much more could be accomplished through an extension of authority. I am a strong advocate of states' and individual rights, and would oppose the usurpation of these privileges by the federal government; but if the federal government can join the states in building and maintaining good roads throughout the nation and give material aid to their militia, I can see no reason why similar arrangements could not be made with state health departments without either losing their identity. Lack of appropriations has been a handicap to the progress of the West Virginia Health Department, and it is up to you men to carry on an educational program among the people until they can and will intelligently demand recognition by our legislators.

My experience in this legislative work has been to see the health of West Virginia citizens traded off for the saving of a dollar here and there to be squandered for political purposes.

I have been rather frank in expressing my opinions, not as arguments but as suggestions. You men who are engaged in this work understand the details and appreciate the magnitude of the problems before you for solution. This I do know. The regulation of health preservation and disease prevention is far from perfect, and it will be through the medium of gatherings like this for discussions and friendly criticisms that the goal of perfection may be reached. I wish, again, to express my personal appreciation of the opportunity to discuss this subject before you, as well as representing the West Virginia State Medical Association, and in the future, if my services are worth anything to you, I am at your command.

Early Roentgen Observations in Duodenal Ulcer

As a result of his experience, Edward L. Jenkinson, Chicago (*Journal A. M. A.*, Dec. 1, 1928), believes that the following conditions are at least suggestive of early duodenal ulcer. (1) An irritable and spastic duodenal bulb which has a tendency to stay empty. (2) Difficulty in keeping the bulb filled in order to observe it closely. (3) The ability of the bulb to fill and to become regular in outline under pressure with the examining hand. (4) Temporary spasm of the pyloric antrum, the antrum being regular in outline. (5) Pedistaltic waves, which may be active in some cases and normal in others. (6) Puddling or overflowing in the second part of the duodenum. One should not let the röntgenographic evidence outweight the fluoroscopic observations. It is well to have the courage of one's convictions.

Effective Range of Iodine Dosage in Exophthalmic Goiter: Preliminary Report

An attempt has been made by Allen G. Brailey and Phebe K. Thompson, Boston (*Journal A. M. A.*, Dec. 1, 1928), to determine the effective range of iodine dosage in exophthalmic goiter. In twelve out of thirteen patients at rest in bed in a hospital, as great a reduction in basal metabolism was obtained with 1 drop of compound solution of iodine (about 6 mg. of iodine) daily as with much larger doses. In eight out of twelve patients more recently studied under the same conditions, half a drop of compound solution of iodine (about 3 mg. of iodine) daily was

as effective as were larger doses. Three patients showed no response to any dose, and one showed a slightly lower metabolic level during the administration of 30 drops daily. The minimum dose that will produce a maximum reduction in basal metabolic rate has not yet been definitely determined. It appears in most cases, however, to be between about one-fifth drop of compound solution of iodine (1.3 mg. of iodine) and about 1 drop (6.3 mg. of iodine) daily. There are observations which suggest, but do not prove conclusively, that the minimum dose is perhaps a little less when a patient is at rest in bed in a hospital than when the same patient is at home occupied with her daily routine.

Treatment of Pernicious Anemia

The liver diet treatment of pernicious anemia of Minot and Murphy and the use of adequate liver extracts have been found by Raphael Isaacs, Cyrus C. Sturgis and Millard Smith, Ann Arbor, Mich. (*Journal A. M. A.*, Dec. 1, 1928), to be a valuable therapeutic advance in the treatment of the disease. The progress of the treatment may be noted during the first two weeks by the change in percentage of the reticulated red blood cells, and after this by the total red blood cell count and hemoglobin percentage. The type of young or new red blood cell delivered into the peripheral circulation depends on the stage to which the erythroblastic tissue in the bone marrow has developed. When the bulk of the cells are in the nucleated (megaloblastic) stage, the first evidence of stimulation (*e.g.*, liver therapy) is increased development to the next stage (reticulocyte). When the bulk of the cells are in the latter stage, stimulation is followed by the increased production of mature cells.

Pollen Content of Still Air

W. W. Duke, Kansas City, Mo. (*Journal A. M. A.*, Dec. 1, 1928), says a very good idea can be gained concerning the amount of pollen deposited on surfaces by exposing a greasy microscopic slide to the air for a given period of time and examining it. Pollen settles out of still air just as mud settles out of water. As a consequence, the pollen content of still air is practically *nil*. In fact, even in a room closed for one day, the pollen deposited in a period of twenty-four hours on a unit of surface was only 3 as compared with about 300 deposited within thirty seconds by air behind a propeller of an airplane even at a height of 3,000 feet. A closed room is a good place for the treatment of patients with pollen disease on days when the outside air is laden with pollen. There is no contraindication to the use of an electric fan if the room is clean.

Surgical Treatment of Carcinoma of Rectum

T. E. Jones, Cleveland (*Journal A. M. A.*, Dec. 1, 1928), contends that a patient will stand a little longer operation far better than he can stand infection, which is always a potentiality in the two-stage operation. Blood tansfusion soon eliminates shock, but recovery from infection is not so easily attained. He describes his technique of one-stage operation for cancer of the rectum. His own series comprised fifteen cases in which the one-stage, combined abdominoperineal operation had been employed. In this series there has been one death—a mortality rate of 7 per cent. The percentage of operability was 65. The longest post-operative course to date has been two and a half years. In this series only one patient has thus far shown evidence of recurrence. Another three years must pass before the true end-results can be reported.

Roentgen Ray in Diagnosis of Primary Pulmonary Neoplasm

Barnet P. Stivelman, New York (*Journal A. M. A.*, Dec. 1, 1928), believes that the röntgen ray is of great value to the clinician in the diagnosis of primary pulmonary malignant conditions when he is acquainted with the type of evidence it has to offer. In early cases, tumors near the hilum and those that spread along the bronchial arborization can not be definitely diagnosticated without the röntgen ray. Early bronchogenic tumors which have not grown large enough to obstruct the bronchus and flat pleural tumors may be missed röntgenologically when physical observations may point to their existence. Central tumors, regardless of their point of origin, are visible röntgenologically long before other methods of examination will suggest their presence. In the presence of large effusions, primary lung tumors can not be diagnosticated by means of the röntgen ray unless the fluid is aspirated and a diagnostic pneumothorax induced for contrast purposes. Spontaneous, free or interlobar empyemas and pulmonary abscesses not of metapneumonic origin when they occur in persons past middle life are in themselves suggestive of a possible malignant condition regardless of equivocal röntgen observations. In difficult cases, films in the oblique positions, bronchography with iodized oil, and particularly early bronchoscopy must be resorted to for a correct diagnosis.

CASE REPORTS

Vincent's Angina

Patient is a white, married female, age 24. Reported February 25, 1929, with a yellowish-gray ulceration and slough involving the crest of the gum between nearly all the teeth. The breath was fetid, and there was increased salivation, tenderness of the gums, impairing mastication; considerable ache in the jaws and gum, swelling of the lymphatics, hyperpyrexia, nausea, loss of appetite, and, in the patient's own words, "sick all over." The patient was given 2% solution of chlorazene, and a saturated solution of sodium perborate, to each pint of which is added ½ dram of phenol and 4 grams of sodium chloride. She was instructed to alternate these two as a mouth wash every half to three quarters of an hour, and to refrain from smoking or at least reduce it to a minimum. The mouth is to be kept as clean as possible, and as soon as tenderness in the gums subsides, brush the teeth thoroughly daily. A laxative was advised to promote good elimination. The gums were dried as much as possible by means of cotton rolls and pellets, then a 10% solution of chromic acid was applied and left in place a few minutes. This chromic acid treatment was repeated daily, carrying the solution well into the pockets between the teeth by means of small pellets of cotton. On each visit a thin, membranous slough of the surface mucous membrane was present, due to the action of the chromic acid. This slough was cleansed off thoroughly before reapplying the acid. As soon as tenderness in the gums permitted, the teeth were scaled of all tartar and thoroughly cleaned. All cavities were filled, and ragged, overhanging margins of fillings eliminated.

After the first 24 hours the pain had subsided considerably. At the end of 48 hours there was no pain, and the lymphatic tenderness and swelling began to subside. By the end of the fifth day practically all symptoms had disappeared, and the patient was feeling very well. This patient has been seen at frequent intervals for the past few weeks, and at the present time is practically well.—L. J. PARMESANO, D.D.S., Elkins, W. Va. Presented at staff meeting of Davis Memorial Hospital.

ABSTRACTS

The Drug Treatment of Premature Systole

Dr. James J. Walsh, of New York City, tells in an interesting manner the story of the drugs used during some forty years of treatment of missed pulse beat. He states that a good many people with missed heart-beat have lived for over fifty years after this has been discovered and it is probable that they had had the affection all their lives and were not hampered in any way, unless the patient got his heart on his mind and was afraid of what might happen to him. The one symptom which deserves treatment is the consciousness of the heart activity and its regular irregularity. Mental therapy plays an important part. Doctor Walsh knew a number of doctors who have been cured of what they were reasonably sure was angina pectoris by all sorts of curious remedies, such as Christian Science, adjustment of the spine and of the pelvis. He thinks that nux vomica and all heart stimulants do harm rather than good. Digitalis made the consciousness of the irregular heart action worse and never did any good. Strophantus proved to be about as unfavorable and it required much more of it. The one drug that has proved helpful after forty years is quinidine. Before the employment of quinidine the only drug that seemed to do any good was the bromides. Potassium bromide was oftener employed but proved rather depressing. There was no difference between potassium bromide and the ordinary triple bromides, though there was a distinct difference in taking sodium bromide, which seemed to have the same sedative effect without the depression. One of the earliest prescriptions, given to a physician-patient some thirty-five years ago when he was a medical student, came from Prof. William Pepper, which called for cinchona and bromide in very moderate doses, to be taken over a prolonged period. This prescription, which looked to the medical student as little better than a placebo given him with the idea of having him take some rather bitter medicine so as to feel that something was being done for him, so far from being anything like that, was actually a carrier of two very interesting therapeutic principles. Probably one of the most favorable influences exerted on the heart when their is considerable depression because of the tendency to missed beats is that produced by laughter. This may be due to the fact that the up-and-down movement of the diaphragm in laughter causes direct massage of the heart and therefore stimulates its activity. One very interesting relation of extrasystole is that to low blood-pressure, people with this condition nearly always having a blood-pressure under 130 and sometimes 120. On damp days, when the barometer is low, people with low blood-pressure lack energy, and

quinidine seems to be a valuable remedy for this as well as the missed heart-beat. It is curiously interesting to realize that, after years of study of various drugs for high blood-pressure, the only one that is commonly praised as likely to be efficient is the old-fashioned bromides. They are made much more efficient by the withdrawal of any extra common salt that may be used, and it has been found that sodium bromide gave better satisfaction than any of the other salts.—*International Clinics*, Dec., 1927.

Diet in Health and Disease

Physical fitness of the individual is dependent upon a proper state of nutrition. The selection of correct and adequate diet is of prime importance relative to nutrition and general health. Improper nutrition is directly and indirectly responsible for many pathologic conditions. It is startling to consider statistics which seem to prove the marked physical unfitness of the American people.

Dr. Victor E. Levine, in his article on "Diet in Health and Disease" (*American Medicine*, Nov., 1928), quotes figures from the report of the Department of Labor, Children's Bureau of 1918, relative to physical defects, which are very interesting. Of approximately twenty-two million school children there were about 20% direct malnutrition cases. He brings out the point that physical defects in children are an index to the physical condition of adults, and discusses the economic loss to the individual and the nation due to disease in which malnutrition is an etiologic factor.

Dr. Levine mentions degenerative diseases and their causes, brings out the defects due to malnutrition, and advocates the correct kind of food in the form of adequate diet. He gives in detail the necessary factors for such diet; points out the necessity for "qualitative and quantitative adequacy." Fifteen detailed guiding points are given for formulating a proper diet. Special diets are discussed to advantage. This article is of distinct value in its practical and detailed discussion of nutrition and diet, and is so replete with up-to-the-minute information that it should be filed for reference by every physician.

TUBERCULOSIS ABSTRACTS

The Value of the History in the Diagnosis of Pulmonary Tuberculosis

Pulmonary tuberculosis may exist without any suggestions of ill health on the part of the patient, either in the immediate past or present. So it can be said that one must not expect to discovery pulmonary tuberculosis only in those having suggestive histories.

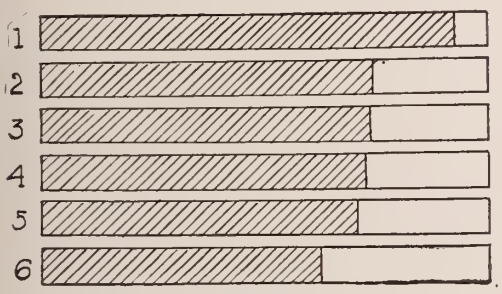
It must be remembered that pulmonary tuberculosis very infrequently goes on to complete resolution except perhaps in young children. The more frequent occurrence is quiescence or arrest of the disease for varying periods of time, between which progression of the disease may take place. It is remarkable what extensive disease may exist with but a very short and indefinite history of impaired health; again, it is a fairly common occurrence to have only a small area of lung involvement and marked ill health for long periods of time. In the long run, however, the more extensive or intensive the disease, the more certain are symptoms to occur.

History Is Suggestive.—A diagnosis of pulmonary tuberculosis should not be made on the history alone. At the most, the history can be only suggestive, and other methods of diagnosis must be employed for confirmation. However, when pulmonary tuberculosis is known to be present, the history may be of incalculable benefit in determining the activity of the disease, but it is by no means an infallible guide even here. The constitutional symptoms, fever, undue fatigue, rapid pulse, loss of weight, night-sweats, etc., emphasize the fact that the individual is ill but draw one's attention to no special organ. The occurrence of such localizing symptoms as cough, expectoration, hemoptysis, pleurisy, focus our attention upon the lungs. Yet we know that such symptoms may occur whenever the parenchyma of the lung becomes involved with other infections, tumors, etc. Nevertheless, the practice of making a presumptive diagnosis of pulmonary tuberculosis is justified under certain conditions. We know that even today, in spite of its diminishing mortality, pulmonary tuberculosis is the most frequent chronic pulmonary infection. Pneumonia, influenza and streptococcic infections have a tendency to occur in endemic or epidemic form. In their absence, pulmonary tuberculosis must always be thought of when prolonged cough and expectoration, and especially hemoptysis or frank pleurisy, occur.

No Infallible Symptoms.—There is no characteristic cough or sputum typical, on microscopic examination, in pulmonary tuberculosis. Nor is there a typical hemoptysis or pleurisy. It is a known fact, however, that tuberculosis is one of the most frequent causes of hemoptysis, and whenever hemoptysis occurs tuberculosis must be excluded. Espe-

cially is this true of hemoptysis without apparent cause. The same may be said of pleurisy, and especially of wet pleurisy. Probably six to nine in every ten instances of hemoptysis of a teaspoonful or more, of pleurisies with effusion occurring without known causes, may be attributable to pulmonary tuberculosis. It must never be lost sight of, however, that pulmonary tuberculosis may occur without hemoptysis of any amount and without pleurisy of any description, and, what is even more surprising, without recognized cough or expectoration. Cavities may even exist under these conditions.

PRINCIPAL SYMPTOMS WHICH 1,500 TUBERCULOUS PATIENTS REPORTED TO PHYSICIANS



1—1,309 patients complained of cough.
2—1,115 patients reported loss of weight.
3—1,114 patients expectorated freely.
4—1,095 patients reported loss of appetite or indigestion.
5—1,069 patients reported loss of strength.
6— 944 patients complained of fatigue.

Symptoms Demand Search for Cause.—Public health agencies used to impress us with the idea that the occurrence of fatigue, loss of weight and strength, nightsweats, anorexia, fast pulse and slight fever spelled the onset of tuberculosis. In many instances, of course, it does. For these are the common symptoms of systemic intoxication, whose seat of origin may be anywhere but is frequently in the lung. Not one of the above-mentioned symptoms is in the least more characteristic of pulmonary tuberculosis than of some other disease. Nevertheless, they do signify an alarming condition for which the real nature must be searched. But if by other means pulmonary tuberculosis has been discovered, the occurrence of these symptoms helps tremendously in evaluating the activity (progress) of the process. It must be borne constantly in mind that for varying periods of time pulmonary tuberculosis may be progressive without the occurrence of constitutional symptoms, or with such slight occurrence as to cause them to be overlooked by the patient.

Summary.—There are no typical symptoms in pulmonary tuberculosis.

The constitutional symptoms point out that the patient is suffering from an active lesion.

The localizing symptoms indicate a pulmonary or pleural lesion.

Hemoptysis or pleurisy with effusion should be looked upon as tuberculous until proved otherwise.

The constitutional symptoms are not diagnostic of the disease, but afford a good index of its activity.

Family History Is Significant.—Other interesting things pertaining to diagnosis, and, in a way, helping to substantiate it, may be gleaned from the history. We know, for instance, that a family history of tuberculosis usually means prolonged and intimate exposure, and that these conditions predispose to tuberculosis in childhood. Why some children in the same family with apparently the same exposure as others should fail to develop the disease, while older and younger children do, can not be entirely explained; but the fact of intimate, prolonged exposure, leading to disease in childhood, is not questioned nowadays. In adult life, a history of exposure apparently does not have the same significance.

In former years, great stress was laid upon underweight as of significance in diagnosis. More recently, Chadwick was able to show but little difference in weight in the tuberculous and non-tuberculous children until the children were 25 per cent underweight. In adults, weight is no sure measure of the presence or absence of tuberculosis. Usually, however, a slight loss of weight is noted.

History May Be Negative.—Pulmonary tuberculosis is a many-phased disease. It may exist, usually in more limited areas but occasionally in extensive areas, without any symptoms at the time or immediately preceding its discovery. Cough and expectoration may never have been present if the patient can be taken at his word. Cavities even may exist without cough or expectoration, and the patient may die without ever having had hemoptysis or pleurisy with effusion. The disease may progress without exacerbation of symptoms or even without symptoms for a while, and in spite of a progressive gain in weight. The history of the patient can not, therefore, be an infallible guide in diagnosis or treatment, and wherever it is feasible, other measures of diagnosis should always be utilized. Particularly should the sputum be examined microscopically and röntgenographs be taken of the chest.—FRED HEISE, M.D., chief resident physician of Trudeau Sanatorium, New York.

THE WEST VIRGINIA MEDICAL JOURNAL

JAMES R. BLOSS, *Editor-in-Chief* - - - - - - - - - Huntington

...ASSOCIATE EDITORS...

J. HOWARD ANDERSON, Marytown — WALTER E. VEST, Huntington — C. A. RAY, Charleston — HARRY M. HALL, Wheeling

THE JOURNAL issued on the first of each month. Entered as second-class matter January 1, 1926. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917. Authorized July 24, 1919.

Subscription to Members ..... $2.00 Per Year
Subscription to Non-Members ..... $3.50 Per Year
Single Copies ..... 50 Cents

OFFICERS

President:
H. M. HALL ..... Wheeling

First Vice-President:
B. F. BONE ..... Moundsville

Second Vice-President:
W. C. SWANN ..... Huntington

Third Vice-President:
J. A. DUFF ..... Martinsburg

Executive Secretary:
MR. JOE W. SAVAGE ..... Charleston

Treasurer:
T. MAXFIELD BARBER ..... Charleston

Delegates to A. M. A.:
JAMES R. BLOSS (1928-29) ..... Huntington
HENRI P. LINZ (1928) ..... Wheeling

Alternates:
A. A. SHAWKEY (1928-29) ..... Charleston
HARRY M. HALL (1928) ..... Wheeling

COUNCILLORS

Chairman of the Council for 1928:
R. H. DUNN ..... South Charleston

First District:
C. W. WADDELL (2-year term) ..... Fairmont
C. G. MORGAN (1-year term) ..... Moundsville

Second District:
C. H. MAXWELL (2-year term) ..... Morgantown
C. H. HALL (1-year term) ..... Elkins

Third District:
JOHN FOLK (2-year term) ..... Bridgeport
J. D. COLE (1-year term) ..... Clarksburg

Fourth District:
ROY BEN MILLER (2-year term) ..... Parkersburg
W. E. VEST (1-year term) ..... Huntington

Fifth District:
J. HOWARD ANDERSON (2-year term) ..... Marytown
H. G. STEELE (1-year term ..... Bluefield

Sixth District:
R. H. DUNN (2-year term) ..... South Charleston
H. A. WALKUP (1-year term) ..... Mt. Hope

¶ All original articles for THE JOURNAL must be made to it exclusively. Communications and items of general interest to the profession are invited from all parts of the state. Notices of deaths, removals from the state, changes of location, etc., are requested.

¶ Our readers are requested to send marked copies of local newspapers containing matters of interest to members of the medical profession. Name of sender should be given.

CONTRIBUTIONS TYPEWRITTEN

¶ Contract with present printer specifies all articles, communications, etc., MUST BE TYPED.

ADVERTISEMENTS

¶ Advertising forms will go to press not later than the tenth of each month. All advertisements must conform to the standard established by the Council of Pharmacy and Chemistry of the A. M. A.

WOMAN'S AUXILIARY

Mrs. R. V. Shanklin, Gary, President; Mrs. T. H. Harris, Parkersburg, vice-president; Mrs. W. C. Swann, Huntington, secretary; Mrs. W. D. Simmons, Slab Fork, treasurer.

Councillors

Mrs. C. G. Morgan, Moundsville, first district; Mrs. Ralph Maxwell, Morgantown, second district; Mrs. H. D. Price, Parkersburg, third district; Mrs. J. R. Bloss, Huntington, fourth district; Mrs. A. G. Rutherford, Welch, fifth district; Mrs. E. S. DePuy, Beckley, sixth district.

Delegates to Woman's Auxiliary of A. M. A.

Mrs. R. V. Shanklin, Gary; Mrs. B. S. Preston, Charleston. Alternates — Mrs. George Jeffers, Parkersburg; Mrs. W. B. Scherr, Morgantown.

STANDING COMMITTEES

Medical Defense Committee

C. G. Morgan, Moundsville, Chairman; H. A. Walkup, Mt. Hope; H. G. Steele, Bluefield.

Committee on Scientific Work

O. B. Biern, Huntington, chairman; G. H. Barksdale, Charleston; A. G. Rutherford, Welch.

Public Policy and Legislative Committee

R. A. Ireland, Charleston, chairman; R. H. Walker, Charleston; James McClung, Richwood; C. R. Ogden, Clarksburg, D. A. MacGregor, Wheeling.

Committee on Medical Education

John N. Simpson, Morgantown, chairman; W. T. Henshaw, Charleston; W. S. Fulton, Wheeling.

Committee on Professional Relations

John R. Shultz, Charleston, chairman, (5-year term); A. G. Rutherford, Welch, (2-year term); W. R. Goff, Parkersburg, (2-year term); Hugh G. Nicholson, Charleston, (3-year term); E. P. Smith, Fairmont, (4-year term)

Workman's Compensation Committee

W. A. MacMillan, Charleston, chairman; C. A. Ray, Charleston; John E. Cannaday, Charleston.

Committee on Public Health

David Littlejohn, Charleston, chairman; John Thames, Charleston; Will McLain, Wheeling.

Surgical Section

Robert King Buford, Charleston, chairman; B. I. Golden, Elkins.

Eye, Ear, Nose and Throat Section

I. D. Cole, Clarksburg, chairman; C. C. Jarvis, Clarksburg.

Hospital Association Officers

R. A. Ireland, Charleston, president; J. S. Turk, Wheeling, president-elect; B. I. Golden, Elkins, first vice-president; W. E.Vest, Huntington, second vice-president; Mr. Joe W. Savage, Charleston, secretary-treasurer.

PRESIDENT'S PAGE

BOSTON it is! From the room in the Statler one looks out, with feelings indeed mixed, on Boston Common, where so much in time past has happened. To us the Tea Party almost surpasses anything else, and one feels it was plotted there. It threw overboard what was not wanted. There could have been no Declaration of Independence had there been no Tea Party. This last took the courage. Downstairs in the hotel is meeting the splendid gathering of the American College of Physicians. From the platform come the new researches in the vitamins A to E. Symbols are getting to be almost a language in medicine.

Concomitantly appear the formidable deficiencies in body make-up which offer so much this is baffling as well as thrilling. Running along with this infinite variety is the ever-increasing problem of the mind and its vagaries, which is taking up so much of the program and whose cohorts will shortly meet in their first assembly at Washington. For some reason the profession in West Virginia is slow in taking this up, and at present we know of but two or three men who are delving into psychiatry. It is a great mistake. We are too backward about it.

In the main, doctors of medicine are an honest folk, and few among them like to have their patients bid them adieu without a diagnosis and relief. Despite all the ponderous research, the almost unthinkable ramifications of design, the stupendous mass of ever-increasing literature, the discouraging welter of statistics, the eternal problem of the undiscovered, it remains to say the unit of all the work the profession accomplishes is the consideration of a single patient immediately presented for diagnosis and relief. The kaleidoscopic changes are devastating. Today we find a vitamin causing sterility, and if one of us happened to have diagnosed syphilis as the cause or possibly recommended an operation for relief, the new departure is well inclined to make one hesitant and, in general, cowards of us all.

Medicine, to be candid, in its present form is becoming too complicated for the finite mind.

Many years ago a youngish person was a bellboy in the McLure hotel at Wheeling. Next he operated the poolroom. He conceived a new idea against the prevailing complexity of hotel management. Today we look out on Boston Common from the last hotel he founded ere he died. It is fitting it is Boston, for Statler threw overboard a lot of useless hotel tradition. The day is past when you can call his ideas theatrical and artificial nonsense, even if they do have some drawbacks—too many "pleases" and "thank-yous" that may or may not be sincere. To us his achievement ranks with Bell and Ford. The other hotels decried it, but most all of them have copied his ideas. The single individual, though one of thousands, is made to feel he is looked after as almost the single guest in the house. The herd idea was getting the best of the hotel business. Crowds, masses, conventions had swamped the hostelries until a full hotel meant an incipient chaos and a total loss of individual attention.

Medicine is getting into the same situation. Masses of patients, with possible thousands of symptoms leading to untold numberless conditions, make a situation complex as eternity itself. What a Statler did in the hotel business awaits some young man to do in medicine. Somewhere in West Virginia may be that young doctor. We hope there is. One who will strike out in the open and reduce the great, complicated medical machine to simpler terms while still retaining all its important attributes. Simplification that will take care of the unit personality of the individual while still accomplishing the relief of the multitude. It is a huge—perhaps an ungrateful—task. Statler, a West Virginian, did it for his calling. So, somewhere in West Virginia, it can be done again.

HARRY M. HALL.

EDITORIAL

The Chicago Trouble

There has appeared in this JOURNAL a good many articles urging close unification and organization on behalf of the members of the medical profession. The subject, no doubt, becomes quite stale and possibly a little tiresome to its readers. Yet there can be no other way of looking at it, notwithstanding it has become a bore. The price of security is an ever-present watchfulness and notification on what is new. An unpleasant task, though necessary. Witness the following from the New York *Herald-Tribune*:

"CCICAGO, April 14.—Julius Rosenwald, Chicago financier and philanthropist, has flatly defied the Chicago Medical Society to interfere with his plan of providing medical treatment for the middle class at moderate cost. The society has expelled Dr. Louis E. Schmidt, head of the Chicago Health Institute, on a charge of unethical conduct. The Health Institute advertises its hospitalization plan at fees to which the Medical Society takes exception.

" 'I do not wish to take sides in the dispute between the Medical Society and Dr. Louis E. Schmidt,' Mr. Rosenwald said on his return from Arizona yesterday.

" 'I wish, further, that it be understood that I have no official information. I say now merely that I have had various statements brought to my attention to the effect that the Chicago Medical Society is opposed to the further extension of facilities whereby persons of moderate means may obtain medical attention and hospital care at prices within their reach.

" 'I do not know, as a matter of established fact, that such statements are true. But, if they are true, then I will say this:

" 'The attitude of the Chicago Medical Society will make no differences in my plans for pay clinics to be established under the fund that I have set aside for that purpose.

" 'Obviously, if the attitude of the Medical Society has been erroneously reported there is no need for me to say anything.

" 'I have no desire or intention to interfere in the internal affairs of the Chicago Medical Society or in the private affairs of any of its members. I am not taking sides with or against Dr. Schmidt or with or against the society. Please make that clear.

" 'I have established a fund to assist persons in moderate circumstances to obtain adequate medical attention and hospital care at prices within their means. My plans concerning this fund were formulated only after long and serious consideration of present-day problems from every angle and every standpoint.

" 'I believe that those plans safeguard the welfare of the physician, the nurse and the hospital no less than that of the patient.

" 'It is not my intention to set up a machine that will harm, either professionally or financially, any doctor, nurse or hospital. My plan simply is this: To assist persons in moderate circumstances to pay their doctors and nurses and hospital bills.' "

Throughout the world's history a man who has made great sums of money has to meet the temptation of being taken up onto the mountain-top and told the whole world will be his if he succumbs to the rather selfish credo that he is supreme; and what he knows about his particular business he knows about everything else. He puts the crown on his own head and comes down fully persuaded that it is given to him to put the world in order. It is a noble delusion. If this man, by a manipulation of chain stores and a great, big catalogue, has succeeded in upsetting the retail business in every city in the country and creating a situation whose worth is still a matter of some debate, he is all the more inclined to seek new worlds to conquer. There is the shining mark, the medical profession, and its domain, the sick and ailing—a big temptation.

Therefore, Julius Rosenwald, who has found the mail-order business a thing beyond the dreams of avarice, now defies the Chicago Medical Society. We are willing to grant that he, no doubt, is sincere in his efforts. He has accomplished something with his negro schools. Doubtless, to him it appears as if he has a perfect right to do as he pleases with his money. He has spent his whole career making the average retail-store dealer appear as an "overcharger" and in anything but a good light, so it is easy enough for him to make it appear as if the middle class is being overcharged for medical services by the average hospital as well as doctor.

One would gather from his actions that there has been no philanthropy in the medical and hospital organizations in the country. From time immemorial there, among them, has been about the only place where philanthropy has existed. The poor never received anything free from a mail-order catalogue, and when they paid for it you could hardly say they obtained the finest quality made, could you? Such as it was, fortunes were reaped

from it and a true philanthropist might have reduced the price to the consumer instead of piling up the profits. For many years, in any city worthy of the name, a man could go and get a free bed, a free operation, or a free medical service. The charities in this regard have reached a point where they should be curtailed rather than widened.

Mr. Rosenwald is here making not only a bad precedent which, you may be sure, will be followed by others, but he is also reflecting on the medical profession and American hospitalization. Mr. Rosenwald, whatever his skill or following, could never have piled up his millions as a medical man or surgeon. It just isn't done. We do not know of any hospitals that are making money. If you want to see enormous profits, look to the cash reserves and yearly profits of the mail-order business. We will, however, grant this: The middle-class man has as yet not been as adequately handled as in the near future he is going to be. But the perfecting of his state will come from within, not without, the medical and hospital organizations.

We said we thought Mr. Rosenwald was sincere. Nevertheless, even if he deplores it, the whole thing is fine advertising. It should also advertise him to every doctor in the United States as, innocently, perhaps, trying to tell them how to run their business. The people of the United States do not need a lot of millionaires in order to secure adequate medical attention. Wealthy men, it is true, make possible the magnificent and splendid hospitals scattered over the country, but they wisely leave it up to those who are in the work to run them. Mr. Rosenwald's scheme may be, as he says, acuated by the highest motives; but, economically, it is an attempt to upset a big profession and, in the last analysis, its patronization. H.

The State Meeting

In looking over the situation generally in the state of West Virginia and comparing with other states, it is felt (perhaps with some prejudice) that there are two outstanding features. One is the scenery, which is superb but which will, with the aid of good roads, take care of itself. The other is the medical profession.

In the last ten years particularly, due not only to the executives and their fellow associates but also to the good work performed in all part sof the state, the medical profession of West Virginia, on account of its compact organization and unified effort, has, we believe, arrived at the point where it is going to be able to carry on certain features and make certain gestures that will, sooner or later, be of value everywhere. It sounds as if we felt too courageous. As a matter of fact, we do not.

It is quite true we have some sparsely settled districts and it follows that the men located there have not every advantage of up-to-date research and equipment. But, like the pioneers of other days, they make up for it in hardy, personal ingenuity and invention. They manage, too, in an almost unbelievable way, to be in touch with their medical societies. We believe many of them are unique in this direction, and, because of this, the state is becoming almost uniformly organized. We can, therefore, say with conviction that there are no longer any so-called backward medical men in this state or any situations or territories presided over by doctors who are not up in the main requirements.

The credit for this state of affairs rests with the county medical societies, which, even in those districts which meet but a few times each year, manage to keep up a good showing of interest. Several men full of vitality and vision are usually responsible for this keeping up the integrity of the districts. The success of the medical program in the recent legislature was due to the general solidarity of all the men in the state. Therefore, it is proposed to make West Virginia one of the best organized as well as one of the most outstanding medical associations in the Union.

To do this requires effort on the part of each society. But the most important feature is that a big, representative gathering of medical men appear at Martinsburg. Particularly is it earnestly desired that those men who have seldom attended their state meetings be present, wherever they may be located or however difficult it may be to leave their work at home. Every man who seldom goes to these gatherings should realize he owes it to himself, his medical society, and, above all, to his following, to be there. The papers mean a great deal, but not any more than talking things over with their fellowmen. Many a doctor only tells his most valuable acquisitions in conversation.

Men located far from a city can, in conversation, find out how other men from their respective cities handle things. The man isolated to himself becomes discouraged at times and feels neglected. By meeting other men similarly placed, he will discover he is really doing good work and that his colleagues, even in the cities, have the same difficulties. You do not learn these things either at your local meetings or in

the JOURNAL. It requires direct contact. A doctor's wife should also meet other doctors' wives. It certainly does enlarge the vision of the women and gives them a feeling of pride in their husbands' vocation. The effect is often splendid in its way.

The Martinsburg meeting is principally an ideal location for the man remotely placed to make a trip to attend with his wife. She, as well as you, deserves the three or four days' relaxation. Good roads reach it from everywhere. Nearby are some of the magnificent scenic wonders of the country. When you go, do more walking up to your neighbor and his wife. There is always too much sitting about in hotel lobbies without the general acquaintance. We all feel it is an honor to be a West Virginia doctor, so why not act as if we do?

Medicine is becoming the keystone of the arch. Every one of us should be prepared to accept the responsibilities which are not, by any means, all scientific. Mutual understanding is of the greatest value and is only obtained at a state meeting. Once we all know each other we are prepared for anything. Our annual meetings are becoming each year more of an event as concerns the welfare of the state. No body of men is more concerned with the honor and glory of the commonwealth than doctors, for in each town they are becoming more and more representative citizens on school boards, chambers of commerce, civic clubs, and in good government.

Therefore, let every man, in this age when good citizens must stand together on many things, be powerful a group of men as can be found within the present at Martinsburg and help to let the rest of the citizens feel that there is as representative and borders of the state. H. M. H.

Obstetrical Film Purchased

It is to be regretted that neither a pediatrician nor an obstetrician will appear on the program at the Martinsburg meeting. It was found impossible to secure a representative from either of these specialties because the meetings of their respective national associations are in direct conflict with our own Martinsburg session.

In order to recompense those in attendance for the absence of the two specialties mentioned above, the Association is pleased to announce that the Wertheim and Weibel film on Obstetrics and Gynecology has been purchased outright for the Martinsburg meeting at a cost of one thousand dollars. This film was made at the Vienna clinics and kept two cameramen busy for 25 months. It is recognized as one of the outstanding achievements of the past year in the field of scientific medicine.

The film will be shown in West Virginia for the first time at the Martinsburg meeting. Later on, it will be offered to any county society that wishes to use it. The purchase of the film was made by Dr. R. H. Paden, of the State Health Department.

Who Wants This Job?

Instructions for curing the misery in one's back, beating a liquor charge or divorcing one's wife would be served up with a meal in the Matthews Café, Charleston, W. Va., under a plan of its enterprising proprietor, it was revealed recently with the publication of an advertisement on the front page of a Charleston newspaper. The "ad" in question read as follows:

> WANTED—Dishwasher with knowledge of law and medicine who can give free legal and medical advice as added attraction to customers.

The JOURNAL feels sure that a bi tof legal and medical advice served with the meals of the Matthews Café would be just the thing. As a matter of fact, we can already picture a customer requesting a roast-beef sandwich and a Wasserman test. Apparently, the proprietor of the Matthews Café holds the medical and legal profession in high regard. He has ignored architects, engineers, alchemists, and insurance salesmen. However, he probably expects to branch out in the near future and employ a chiropractic cook.

If the Matthews Café job has not already been grabbed up, the JOURNAL wishes to nominate Bernarr MacFadden or *Oh! Oh!* McIntyre—or both.

Early Diagnosis Campaign

The West Virginia Tuberculosis and Health Association is having a campaign for early diagnosis in tuberculosis. It is rather a matter of regret, but nevertheless true, that some of us harbor a delusion that the fight against tuberculosis is about over. The increased absence of the out-and-out tuberculous patient, both in our offices and on the street, make us too well satisfied with what has been done.

The most difficult task of all awaits us—diagnosing the early infection. Let us, then, help the West Virginia Tuberculosis Association all we can in making this phase, too, a complete success.

Group Life Insurance

For the last time we wish to call attention to the status of the group life insurance policy now under consideration by the West Virginia State Medical Association. Whether or not the policy is placed in force depends upon the number of applications received before the Martinsburg meeting and upon the action of the council and house of delegates at the Martinsburg meeting.

On page four of the advertising section of this issue of the JOURNAL will be found a full-page advertisement setting forth in detail the various facts concerning the insurance in question. In this advertisement is found a coupon application for individual policies. The insurance committee requests once more that all members interested in this insurance, who have not sent in their applications, fill out the coupon on page four and return it to the office of the executive secretary.

Membership Increase

It is very gratifying to look over the 1929 membership roster of the state association and find it to be in considerably better shape than at the same period in 1928, especially concerning the number of delinquent members. On April 23, 1928, there were approximately 200 members of the Association who had not yet paid up their dues for that year. On April 23 of the present year there were only 127 delinquent members, with every indication that this number would be materially cut down by convention time.

The membership status this year is of unusual interest because there has been no grandstand play to bring in the delinquents. No threats or promises have been made and no great cry of suspension has been turned loose against our unpaid members. The county society secretaries have worked quietly and efficiently, and the result is a record that is hard to beat.

Some one may point out that the West Virginia State Medical Association must have something more than membership to make it a worth-while organization. That is true. On the other hand, if the Association did not have a worth-while organization, then the membership status would be anything but pleasing. The one backs up the other from any angle at which this question is approached.

There are a number of reasons why the membership of 1929 has taken care of itself. Approximately one-half of the societies have already been visited by the state president. The JOURNAL has been greatly improved. The Association has recently concluded a successful legislative fight. The finances of the Association are in excellent shape. All of these things have tended to make the members more interested in their medical organization, with the result that the dues membership question has taken care of itself.

When the state meeting was held in Fairmont in May, 1928, there were only three county societies in the state with one hundred per cent paid-up membership. On April 23 of the present year, one month earlier, there were already eight county societies in the one hundred per cent class. These societies are: Brooke County, Doddridge County, Fayette County, Marshall County, Monongalia County, Preston County, Summers County, and Wayne County. This record is especially commendable when it is considered that Fayette County has 57 members and Monongalia County has 48 members. Cabell County should also be mentioned, with only one delinquent out of 78 members.

West Virginia in Limelight

What should be of interest to every member of the Association is the recent attention centered upon the medical profession of West Virginia by our president, Dr. Harry M. Hall. On March 31, Dr. Hall had a most interesting article in the New York *Herald-Tribune* upon the subject, "A Medical Glance at Finance." In this article, Dr. Hall grasped the opportunity of comparing the business ability of the physician with that of Wall Street and its ups and downs. One phrase stands out boldly in this splendid article, setting forth that "Medical men are made sport of for not knowing how to cure cancer, whooping cough, and hay fever. . . . The financial world is befuddled, bewildered and befogged on how to handle a material, concrete matter, perfectly comprehensive to the naked eye."

A second article by Dr. Hall appeared in the April 11 issue of the Boston *Herald*, and this one dips directly into the heart of West Virginia for its material. The article is an answer to an editorial appearing in the *Herald*, welcoming the American College of Physicians and apologizing for certain medical legislative measures passed by the Massachusetts legislature. Dr. Hall takes up our own experience with our own West Virginia legislature and urges the Massachusetts doctors to fight their political battles with political weapons, as we have done.

CONVENTION NEWS

Official Call

To the Officers, Delegates, and Members of the West Virginia State Medical Association:

The sixty-second annual meeting of the West Virginia State Medical Association will be held at Martinsburg, W. Va., with headquarters at the Shenandoah Hotel, from Monday, May 20, to Thursday, May 23, 1929.

The Council will convene at 3:30 o'clock on the afternoon of May 20 in the sample room of the Shenandoah Hotel.

The House of Delegates will convene at 8 o'clock on the evening of May 20 at the Apollo Theatre.

The general scientific assembly will meet for the first time at 10 o'clock on the morning of May 21 at the Apollo Theatre.

The surgical section will convene at 1:30 o'clock on the afternoon of May 22 at the Firemen's Hall, next to the Apollo Theatre.

The eye, ear, nose and throat section will convene at 1:30 o'clock on the afternoon of May 22 in the Sunday school room of the Lutheran Church, directly across the street from the Shenandoah Hotel.

The section of internal medicine will convene at 1:30 o'clock on the afternoon of May 22 in the Apollo Theatre.

The annual address of the president will be delivered on the opening morning of the convention.

The oration on surgery will be delivered at the opening of the general session on the afternoon of May 21.

The oration on medicine will be delivered at the opening of the general session on the morning of May 22.

The registration department will be open in the Gold room of the Shenandoah Hotel at 10 o'clock on the morning of May 20 and will remain open until 8 o'clock of the same evening. Thereafter it will remain open from 8:30 o'clock A.M. until 8:30 o'clock P.M. until the close of the convention.

Respectfully,

JOE W. SAVAGE,

Executive Secretary.

Order of Business

COUNCIL

For the council sessions, the order of business will be as follows:

Call to order by Council Chairman.

Report of Committee on Scientific Work.

Report of Committee on Publication.

Report of Committee on Public Policy and Legislation.

Report of Committee on Public Relations.

Report of Committee on Permanent Home.

Report of Secretary.

Report of Treasurer.

Report of Auditing Committee.

New Business.

HOUSE OF DELEGATES

For sessions of the House of Delegates, the order of business will be as follows:

Call to order by the President.

Receiving Credentials.

Report of Committee on Scientific Work.

Report of Committee on Publication.

Report of Committee on Public Policy and Legislation.

Report of Committee on Public Relations.

Report of Committee on Permanent Home.

Report of Special Committees.

Report of Secretary.

Report of Treasurer.

New Business.

Change in By-Laws Planned

Dr. O. B. Biern, of Huntington, chairman of the scientific committee of the Association, has recently announced that he will ask the house of delegates to set the time for the election of officers as the last order of business on the last morning of the state meeting at Martinsburg. Heretofore the election of officers at the state meetings has been the first order of business on the last morning of the annual sessions.

According to Dr. Biern, there is a general belief throughout the state that a motion to change the time of election of officers must lay on the table for one year. He claims, however, that this is not the case, and has quoted the constitution and by-laws to substantiate his argument. Dr. Biern has pointed out that the constitution provides that the election shall be held on the last morning of the convention, but that no special time or hour or order is specified. Therefore, a change in the constitution, which requires one year, is not required.

The program committee chairman, on the other hand, calls attention to the by-laws which provide that the election shall be the first order of business on the last morning of the state meeting. The by-laws, therefore, must be amended in order to change the election to the last order of business on the last

day of meeting. Dr. Biern points out that the by-laws can be amended on one day's notice, and he expects to request such an amendment at the meeting of the house of delegates on the evening of May 20. The amendment could be passed at a subsequent session, he said, and the election scheduled for the final order of business to follow the conclusion of the general program.

"I certainly would like to see this amendment go through," Dr. Biern said, "because I have always felt the election should be the last thing on our state program and I would like to see it tried out. If it doesn't work satisfactorily we can go back to the old order of business that we have followed in the past. The primary object of a state meeting should be in assimilating scientific knowledge and not in electing officers. In the past, only a handful of men have remained for the scientific program after the election was over with. If the election is the last order of business, we can be assured of a good attendance for the scientific program on the last morning of the meeting."

The provision in the constitution referred to by Dr. Biern is found in section 3 of article IX, which reads: "The officers of this Association shall be elected by the house of delegates on the morning of the last day of the annual session."

The provision in the by-laws covering the same question is found in section 2 of article V, which reads: "The election of officers shall be the first order of business of the house of delegates after the reading of the minutes on the morning of the last day of the general session." Section 1 of chapter XII of the by-laws provides that "These by-laws may be amended at any annual session by a majority vote of the house of delegates present at that session, after the amendment has lain on the table for one day."

Dr. Haven Emerson

Dr. Haven Emerson, who will be one of the speakers at the meeting of the Association in Martinsburg, was formerly health commissioner of New York City and for the past seven years has been professor of public health administration at the College of Physicians and Surgeons, Columbia University. He has just returned from Europe, where he has been serving on a commission appointed by the League of Nations to study the health administration of Greece and make recommendations for reorganization of the services. He has also been attending, in Paris and Berlin, various conference on the revision of the international list of causes of death, as one of the representatives of the United States.

Film on Obstetrics

One of the greatest achievements in moving pictures, as related to the field of medical practice, will be shown at the state medical meeting. It is a picture made at the Wertheim Clinic in Vienna, Austria, by Dr. Wertheim and Dr. Weibel, acknowledged authorities on obstetrics and gynecology, giving surgical marvels in normal and abnormal childbirth. These pictures were taken with a very fine camera, magnifying the field of operation fifty times, showing even the point of the needle.

A West Virginia doctor who saw the picture recently in a western city states that it equals a post-graduate course in obstetrics.

The picture will be shown Tuesday evening, May 21st, at 7:30 P. M., at the Apollo Theatre, where all sessions of the conference are held. This, the first showing of this unusual picture in West Virginia, has been made possible through the co-operation of the State Health Department. Owing to the technical nature of this program, members of the medical profession only are invited to this private showing. No admission fee will be charged, though in many cities where the film has been shown before medical societies an admission fee of $2 has been charged.

The picture will show the following: Clinical examination for pregnancy; abnormalities of skeleton; normal delivery; breech presentation; face presentation, and delivery resuscitation of a child; Walcher posture; eclampsia; breech presentation with extraction of child; podalic version from head presentation and extraction of the fœtus by the foot; extraction of dead fœtus by the foot with perforation of the after-coming head; craniotomy; forceps delivery; Césarean section; Césarean section with hydramnios; examination of prolapse of uterus; removal of an ovarian cyst by laparotomy.

Who They Are

Below will be found a brief sketch of the out-of-state doctors who will appear on the general program at the Martinsburg meeting. They are all at the top of their respective specialties and their appearance insures one of the best programs that the West Virginia State Medical Association has ever had.

Dr. Ralph Major, of Kansas City, Mo., is professor of medicine at the University of Kansas and is the author of numerous books and papers. He is especially known for his work on blood-pressure.

Dr. Hugh Young, of Baltimore, is professor of clinical surgery at the Johns Hopkins Hospital and is a well-known author. Dr. Young is a pioneer in prostatic surgery and urology.

Dr. John Deaver, of Philadelphia, needs no introduction to a medical audience anywhere in this country. He is the dean of American Surgeons and is connected with the Jefferson Medical College at Philadelphia.

Dr. John Phillips, of Cleveland, is a former president of the American College of Physicians. He is head of the department of medicine at the Crile Clinic in Cleveland.

Dr. Julius Friedenwald is professor of diseases of the gastrointestinal tract at the University of Maryland, Baltimore. He is a co-author of "Friedenwald and Rurah on The Dietetics."

Dr. Joseph Collins, of New York, is author of the well-known series, "The Doctor Looks at Life," "The Doctor Looks at Medicine," etc. He is also the founder of the New York Urological Institute.

Dr. Carey Eggleston, of New York, is a pioneer and international authority on diseases of the heart. He devised the Eggleston method of digitalization of the heart.

Dr. John H. Stokes, of Philadelphia, is professor of dermatology and syphilology at the University of Pennsylvania graduate school. He is a former chief of the dermatological clinic of The Mayo Clinic at Rochester, Minn.

Dr. Edmund Horgan, of Washington, D. C., is one of the most eminent surgeons in the nation's capital. He graduated from the George Washington University School of Medicine in 1908. His paper on "Hemorrhoids" is expected to be one of the highlights of the meeting.

Dr. William O'Neill Sherman, of Pittsburgh, is one of the best-known industrial surgeons in this country. His paper on "The Treatment of Trauma" will be of especial interest to West Virginia surgeons.

Dr. S. R. Skillern, Jr., of Philadelphia, is professor of laryngology at the Medico-Chirurgical College of Philadelphia and laryngologist to Rush Hospital. He is also a fellow of the American Laryngological, Rhinological and Otological Society, and a fellow the New York Academy of Medicine and a member of the Society of German Laryngologists. Dr. Skillern is also a well-known author.

Dr. Edward A. Looper, of Baltimore, is well known for his work done on laryngeal tuberculosis at the Maryland State Tuberculosis Sanatorium. He was president, last year, of the Nose and Throat section of the Southern Medical Association.

Roads to Martinsburg

For those members of the West Virginia State Medical Association who expect to drive to the Martinsburg meeting the data given below has been compiled. The first question that is usually asked by a motorist is, "How far is it to my destination?" The distance from most of the larger cities to Martinsburg is given below:

	MILES
Beckley	338
Bluefield	361
Buckhannon	208
Charleston	327
Clarksburg	181
Elkins	165
Fairmont	183
Grafton	160
Huntington	379
Logan	394
Marlinton	231
Morgantown	158
Moundsville	251
New Martinsville	243
Parkersburg	273
Richwood	294
Welch	395
Wellsburg	281
Weston	215
Wheeling	263

There are two main routes leading to Martinsburg through West Virginia, hereafter referred to as the northern and the southern. The northern is Route No. 50 and the southern is Route No. 60. The northern route enters the state at Parkersburg and runs through West Union, Salem, Clarksburg, Grafton, Rowlesburg, Oakland, Md., Romney, Winchester, Va., and Martinsburg. All of this route is paved, with the exception of five miles between Redhouse and Gormania in Maryland. This stretch is unimproved but passable. It can be avoided by turning north at Redhouse and going through Oakland, Md., Keyser's Ridge, Frostburg, Cumberland,

Hancock, Berkeley Springs, and Martinsburg. This latter route is somewhat longer, but is safer.

Hard-road connections with the northern route can be easily made from all towns and cities in the northern part of the state. Those towns lying south of the northern route that can reach the route by hard road more easily than they can reach the southern route include Spencer, Elizabeth, Grantsville, Weston, Buckhannon, Elkins, Philippi, Parsons, and Thomas.

The southern route enters the state at Huntington and passes through Charleston, Montgomery, Rainelle, Lewisburg, and White Sulphur Springs. From there it goes through Virginia to Covington, Clifton Forge, Staunton, Harrisonburg, Winchester, and Martinsburg. This route is easily accessible to Logan, Oak Hill, Mt. Hope, Hinton, Beckley, Alderson, Ronceverte, Welch, Mullens, Bluefield, and Princeton. In motoring from the four last-named cities, however, it is best to go through Salem and Roanoke, Va., and pick up the Shenandoah Valley route at Lexington.

House of Delegates

The following members of the House of Delegates for the sixty-second annual meeting have had their credentials certified to the executive secretary as of May 1, 1929:

BARBOUR-RANDOLPH-TUCKER — Delegates, J. C. Irons, Elkins; H. K. Owens, Elkins; alternate, W. E. Whiteside, Parsons.

BROOKE COUNTY—Delegate, W. J. MacDonald, Wellsburg.*

CABELL COUNTY—Delegates, J. A. Guthrie, W. C. Swann, O. B. Biern, R. M. Bobbitt, all of Huntington; alternates, J. S. Klumpp, R. J. Wilkinson, R. S. Van Metre, C. B. Wright, all of Huntington.

CENTRAL WEST VIRGINIA—Delegates, L. O. Hill, Camden-on-Gauley, L. W. Deeds, Buckhannon, S. S. Hall, Buckhannon; alternates, S. P. Allen, Webster Springs, H. O. Van Tromp, French Creek.

DODDRIDGE COUNTY—Delegate, A. Poole, West Union.

EASTERN PANHANDLE — Delegate, W. Ross Cameron, Martinsburg.*

FAYETTE COUNTY—Delegates, B. F. Brugh, C. W. Stallard, of Montgomery; alternates, Claude Frazier, Powellton, and L. G. Houser, of Beckley.

GRANT-HARDY-HAMPSHIRE-MINERAL — Delegates, J. H. Wolverton, Piedmont, Thomas Bess, Keyser, M. H. Maxwell, Keyser.

GREENBRIER VALLEY—Delegates J. G. Leach, Quinwood.*

HARRISON COUNTY—Delegates, J. E. Corbin, F. V. Langfitt, and R. C. Hood, of Clarksburg.

KANAWHA COUNTY—Delegates, Russel Kessel, R. A. Ireland, W. A. McMillan, E. B. Henson, W. P. Black, G. H. Barksdale, all of Charleston; alternates, B. H. Swint, J. R. Shultz, G. G. Irwin, B. S. Preston, H. G. Thompson, all of Charleston.

LEWIS COUNTY—Delegates, M. D. Cure, E. T. W. Hall, Weston; alternates, W. P. King, W. T. Smith, Weston.

LOGAN COUNTY—Delegates, S. B. Lawson, Logan, H. H. Farley, Logan; alternates, L. W. Lawson, Logan, R. W. Roberts, Man.

MARION COUNTY—Delegates, E. P. Smith, L. D. Howard, H. S. Keister, Fairmont; alternates, W. A. Welton, J. B. Clinton, C. L. Holland, Fairmont.

MARSHALL COUNTY—Delegates, J. C. Peck, J. H. Luikart, D. B. Ealy, all of Moundsville; alternates, C. S. Fortney, M. J. Fortney, Hundred.

MCDOWELL COUNTY—Delegates, H. G. Camper, S. A. Daniel, Welch; alternates, W. L. Peck, Coalwood, R. V. Shanklin, Gary.

MERCER COUNTY—Delegates, W. H. Wallingford, Princeton, A. H. Hoge, Bluefield; alternates, David Littlejohn, Charleston, C. C. Ballard, Gap Mills.

MINGO COUNTY—Delegate, Fred Ben Quincy, Williamson.*

MONONGALIA COUNTY—Delegates, F. T. Scanlon, C. F. Boyers, Morgantown; alternates, C. B. Wylie, H. C. Powell, Morgantown.

OHIO COUNTY—Delegate, H. W. Bond, Wheeling.*

ACADEMY OF MEDICINE OF PARKERSBURG—Delegates, J. T. Goff, T. L. Harris, R. S. Widmeyer, H. M. Campbell, Parkersburg; alternates, R. H. Boice, E. C. Hartman, W. B. Richardson, Parkersburg.

PRESTON COUNTY—Delegate, L. H. Lewis, Kingwood.*

RALEIGH COUNTY—Delegate, Ira Fisher, Stotesbury.*

SUMMERS COUNTY—Delegate, A. P. Hudgins, Hinton.*

TAYLOR COUNTY—Delegate, Paul P. Warden, Grafton.*

* Complete delegate list not yet received.

TYLER COUNTY—Delegate, V. H. Dye, Sistersville.

WAYNE COUNTY—Delegate, J. W. Ferguson, Kenova.

Commercial Exhibits

The West Virginia State Medical Association is fortunate this year in having such a splendid representation of commercial exhibits. The exhibits will be displayed in the Gold room on the first floor of the Shenandoah Hotel. All members of the Association are urged to visit these exhibits and to see and examine the excellent products on display.

The list of exhibitors who have signed up for space follows:

Max Wocher and Sons of Cincinnati.

Mellins Food Company of Boston.

Kelley-Koett Manufacturing Company of Covington, Ky.

Mead Johnson of Evansville, Ind.

The Zimmer Company of Warsaw, Ind.

The LaMotte Chemical Products Company of Baltimore, Md.

The Robert A. Fulton Company of Pittsburgh.

The Merrell-Soule Company of Syracuse, N. Y.

The Deshell Laboratories of Chicago.

The National Drug Company of Philadelphia.

The State Health Department of West Virginia, Charleston.

Announcements

The sixty-second annual convention banquet of the West Virginia State Medical Association will be served on Wednesday evening, May 22, at 6:30 o'clock, in the dining room of the Shenandoah Hotel, Martinsburg. There will be a cover charge of two dollars per plate and tickets will be on sale at the registration desk.

The annual convention golf tournament will be played over the nine-hole course at Martinsburg. A small entrance fee will probably be charged to defray the expense of a suitable trophy for the winner. All entrants should communicate with Dr. C. T. Taylor, of Huntington, who is chairman of the golf committee.

The annual meeting of component society secretaries will be held at noon on Wednesday, May 22, and a luncheon will be served at that time. Each secretary will be expected to report the activities of his society and to make suggestions for the improvement of all societies at this round-table conference. The election of officers for the ensuing year will be held at this meeting.

The annual convention dance will be given in the ballroom of the Shenandoah Hotel on the evening of May 22, immediately after the close of the convention banquet.

All members of the Association, their wives, and all guests are urged to register immediately upon arrival in Martinsburg. Members of the Association should bring their membership cards for proper identification.

All members who expect to attend the Martinsburg meeting and who have not yet made hotel reservations are reminded to do so at once.

Presidents of the West Virginia State Medical Association

Date	*Place of Meeting*	*Name*
1867	Fairmont	W. J. Bates*
1867	Wheeling	John Frissell*
1868	Grafton	John Frissell*
1869	Clarksburg	H. W. Brock*
1870	Parkersburg	J. W. Ramsey*
1871	Martinsburg	W. J. Bland
1872	Wheeling	J. M. Lazzell*
1873	Parkersburg	R. H. Cummins*
1874	Morgantown	M. S. Hall*
1875	Point Pleasant	M. Campbell*
1876	Wheeling	A. R. Barbee*
1877	Clarksburg	E. A. Hildreth, Sr.*
1878	Weston	J. W. McSherry*
1879	Martinsburg	W. H. Sharp*
1880	Parkersburg	W. M. Dent*
1881	Wheeling	W. F. Van Kirk*
1882	Wheeling	J. E. Reeves*
1883	Grafton	B. W. Allen*
1884	Clarksburg	A. Gerstell*
1885	Weston	George Baird*
1886	Charleston	T. A. Harris*
1887	White Sulphur Springs	S. L. Jepson*
1888	Huntington	L. S. Brock*
1889	White Sulphur Springs	L. D. Wilson*
1890	Wheeling	S. H. Austin*
1891	Fairmont	S. H. Brownfield*
1892	Clarksburg	C. Shriver*
1893	Parkersburg	D. P. Morgan*
1894	Berkeley Springs	R. W. Hazlett*
1895	Davis	D. Mayer*
1896	Wheeling	J. A. Campbell
1897	Charleston	N. D. Baker*
1898	Martinsburg	C. F. Ulrich*
1899	Weston	J. L. Dickey*

1900 Morgantown.....C. S. Hoffman*
1901 Grafton.....A. H. Thayer*
1902 Parkersburg.....G. A. Aschman*
1903 Charleston.....H. B. Stout
1904 Fairmont.....T. L. Barber*
1905 Wheeling.....T. M. Hood
1906 Webster Springs.....S. S. Wade
1907 Huntington.....W. W. Golden
1908 Clarksburg.....F. Howell
1909 Elkins.....V. T. Churchman
1910 Parkersburg.....T. W. Moore
1911 White Sulphur Springs...C. A. Wingerter
1912 Webster Springs.....C. O. Henry
1913 Charleston.....F. L. Hupp
1914 Bluefield.....R. E. Vening*
1915 Huntington.....H. P. Linsz
1916 Wheeling.....A. P. Butt
1917 Fairmont.....J. E. Rader
1918 Martinsburg.....Sam Holroyd
1919 Clarksburg.....Robt. J. Reed
1920 Parkersburg.....H. R. Johnson
1921 Charleston.....J. H. Anderson
1922 Huntington.....Geo. A. MacQueen*
1923 Beckley.....John N. Simpson
1924 Wheeling.....R. A. Ashworth
1925 Bluefield.....Geo. D. Jeffers
1926 Morgantown.....James R. Bloss
1927 White Sulphur Springs.....C. R. Ogden
1928 Fairmont.....C. A. Ray
1929 Martinsburg.....H. M. Hall

* Deceased.

TENTATIVE PROGRAM

TUESDAY MORNING, MAY 21
General Session—10 o'Clock

CALL TO ORDER
Dr. Harry M. Hall, President.

INVOCATION.

ADDRESS OF WELCOME
Dr. J. A. Duff, Martinsburg.

RESPONSE
Dr. C. A. Ray, Charleston.

PRESIDENT'S ADDRESS
Dr. Harry M. Hall, Wheeling.

PAPER
Dr. John Deaver, Philadelphia.
Discussion: Dr. R. J. Wilkinson, Huntington.
Dr. John T. Goff, Parkersburg.

TUESDAY AFTERNOON, MAY 21
General Session Continued—2 o'Clock

ORATION ON SURGERY
"Some Advances in Urology of General Interest" —Dr. Hugh Young, Baltimore.
"Some Difficulties Encountered in the Diagnosis of Abdominal Conditions"—Dr. Julius Freidenwald, Baltimore.
Discussion: Dr. W. W. Golden, Elkins.
Dr. James H. Baber, Huntington.
"Chronic Nephrosis: Is It a Clinical Entity?"—Dr. Ralph Major, Kansas City.
Discussion: Dr. M. C. Borman, Montgomery.
Dr. R. M. Wylie, Huntington.
The Canti Film Cinematographic of Living Tissue and the Effect of Radium Radiation on the Cells.—Obtained by Dr. Frank LeMoyne Hupp, Wheeling, through the courtesy of the American Society for the Control of Cancer. (*No lecture or discussion.*)

TUESDAY EVENING, MAY 21

7:30. FILM
"Obstetrics and Gynecology."

8:30. PAPER
"The Patient's Dilemma, or How to Select and Manage Your Doctor"—Dr. Joseph Collins, New York.

WEDNESDAY MORNING, MAY 22
9 o'Clock

ORATION ON MEDICINE
"Diagnosis of Spinal Cord Tumors"—Dr. D. A. MacGregor, Wheeling.
"A New Principle in the Surgical Treatment of Varicose Ulcers" (*with lantern slides*)—Dr. Hugh Trout, Roanoke, Va.
Discussion: Dr. A. U. Tieche, Beckley.
Dr. C. R. Ogden, Clarksburg.
"Rest in the Treatment of Cardiac Disease"—Dr. Carey Eggleston, New York.
Discussion: Dr. G. H. Barksdale, Charleston.
Dr. Luther C. Davis, Fairmont.
"The Eczema Problem" (*illustrated with lantern slides*)—Dr. J. H. Stokes, Philadelphia.
Discussion: Dr. W. S. Robertson, Charleston.
Dr. J. E. Hubbard, Huntington.

WEDNESDAY AFTERNOON, MAY 22
Section on Internal Medicine—2 o'Clock

PAPERS

"Medical Management of Patients with Gastric Neuroses"—Dr. John Phillips, Cleveland.

"Diagnosis of Acute and Chronic Gout"—Dr. A. H. Hoge, Bluefield.

"The Occurrence and Significance of Agglutinins for Brucella Abortus in Human Serums in West Virginia"—
Dr. Robb Spalding Spray, Morgantown.
Dr. Ben W. Hess, Morgantown.

"Chronic Nephritis in Young Adults: Some Observations as to Onset and Clinical Course"—Dr. E. L. Armbrecht, Wheeling.

"Bronchial Asthma"—Dr. W. M. Sheppe, Wheeling.

WEDNESDAY AFTERNOON, MAY 22
Surgical Section—2 o'Clock

No. 1—SYMPOSIUM ON INDUSTRIAL SURGERY

"The Treatment of Trauma"—Dr. William O'Neill Sherman, Pittsburgh.

"Treatment of Ununited Fractures and Their End Results"—Dr. H. D. Hatfield, Huntington.

"Nerve and Muscle Injury in Relation to Fractures"—Dr. A. G. Rutherford, Welch.

Discussion: Dr. E. Bennette Henson, Charleston.
Dr. Wade H. St. Clair, Bluefield.

No. 2—"The Importance of Peritonization in Abdominal Surgery"—Dr. John E. Cannaday, Charleston.

Discussion: Dr. R. J. Wilkinson, Huntington.
Dr. W. S. Fulton, Wheeling.

No. 3—"Early Recognition of Some Common Urologic Conditions"—Dr. Dorsey Brannan, Morgantown.

Discussion: Dr. J. C. Matthews, Huntington.
Dr. G. G. Irwin, Charleston.

NOTE—*No discussion will be presented until all scientific papers have been read.*

WEDNESDAY AFTERNOON, MAY 22
Eye, Ear, Nose and Throat Section—2 o'Clock

PAPERS

"The Advantages of the Modified Lothrop Operation Over the Killian Procedure in Chronic Frontal Sinus"—Dr. Samuel R. Skillern, Jr., Philadelphia.

"Infection of the Accessory Sinuses"—Dr. Edward A. Looper, Baltimore.

"Economics"—Dr. H. V. King, Morgantown.

"Eye Injury"—Dr. G. B. Morison, Clarksburg.

WEDNESDAY EVENING, MAY 22
ANNUAL BANQUET

Toastmaster, Dr. A. Bruce Eagle, Martinsburg.
7 o'clock—Shenandoah Hotel
Cover charge, $2.00 per plate. Tickets obtained at Registration Desk.

CONVENTION BALL
10 Until 1 o'Clock

THURSDAY MORNING, MAY 23
General Session Continued

PAPERS

"Public Health"—Dr. Haven Emerson, New York.

Discussion: Dr. David Littlejohn, Charleston.
Dr. W. Ross Cameron, Martinsburg.

"The Treatment of Hemorrhoids" (*illustrated with lantern slides*)—Dr. Edmund Horgan, Washington, D. C.

Discussion: Dr. Roy Ben Miller, Parkersburg.
Dr. W. R. Laird, Montgomery.

COUNTY SOCIETY NEWS

Ohio County

Dr. Hugh Trout, of Roanoke, Va., was the scientific essayist at the March 29 meeting of the Ohio County Medical Society, which was held in the Masonic Temple auditorium in Wheeling. He spoke on the subject, "New Principle in the Treatment of Ulcers Due to Varicose Veins and Lymphatic Blockage." His paper was illustrated by moving pictures, animated pictures, and lantern slides. Discussion was opened by Dr. F. L. Hupp and Dr. R. J. Reed, Sr., both of Wheeling.

This was an open meeting, to which the Ohio county nurses were especially invited. Dr. A. L. Jones, president, presided at the session.

H. W. BOND, Secretary.

Marion County

Dr. Luther C. Davis, of Fairmont, was the scientific essayist of the evening at the regular March meeting of the Marion County Medical Society. He talked on "Interpretation of the Cardiograph," and explained and presented his subject in a clear and interesting way.

Four new members were accepted for membership in the Marion County Medical Society at the March meeting. They were Dr. Rush Lambert, Dr. S. J. Skarzinski, Dr. A. H. Stevens, and Dr. Ford B. Rogers, all of Fairmont.

PHILIP JOHNSON, Secretary.

Monongalia County

A meeting of unusual interest was held by the Monongalia County Medical Society on the evening of April 2 at the Woman's Club room, Morgantown, when Dr. S. S. Wade presented a historical paper on "Medical Organization in West Virginia: Retrospective and Prospective." This paper showed the result of much work and correspondence and will prove a valuable record for the archives of the society.

The other paper of the evening was presented by Dr. Frank LeMoyne Hupp, of Wheeling, on the subject of "Medical Economics." Dr. Hupp, who is president of the Nurses' Examining Board of West Virginia, also had a most interesting paper.

The program was preceded by an informal dinner for the members present.

G. R. MAXWELL, Secretary.

Mercer County

The Mercer County Medical Society held its regular meeting in the directors' room of the Municipal building, Bluefield, with President Clements in the chair, who called the meeting to order at 8:30 P.M. The minutes of the previous meeting were read by the secretary and approved.

Having laid over the proper length of time, and notices being sent out to each member of the society, a motion was made by Dr. Kirk and seconded by Dr. Sam Holroyd, and carried, that part of Section 2, Chapter XI of the by-laws be changed to read as follows: "The meeting shall be held at 8:00 P.M. the third Thursday in March, June, September and December, or as near these dates as thought expedient by the program committee."

Waiting on other members to be present, the president proceeded with the general business, and Dr. Isaac Pierce, of Tazewell, Va., being present, made us a talk on the members of the Clinch Valley Medical Society coming to Bluefield the 9th of May, to be guests of the Mercer County Medical Society. It was decided that the Mercer County Medical Society would put on the program by holding clinics at the St. Luke's Hospital from 2 to 4 in the afternoon, Bluefield Sanitarium from 4 to 6, a banquet at The West Virginian hotel at 6:30 P.M., and then three or four papers would be read by some of our members not connected with the two hospitals, after the banquet.

The committee Dr. Bowyer had appointed to get up the program was as follows: Drs. Wade St. Clair, C. M. Scott, R. O. Rogers, John McGuire, and A. H. Hoge. This same committee was duly elected by the society, with the regular program committee (Drs. Clements, Reynolds, and Steele) instructed to look after the program, general arrangements, and entertainment of the Clinch Valley Medical Society. It was unanimously decided by the members present that the members of the Clinch Valley Medical Society and their invited guests be the guests of the Mercer County Medical Society at the banquet on the evening of May 9th.

Under the program, Dr. E. W. Horton gave us quite an extensive and thorough talk on "The Umbilical Cord." Dr. B. S. Clements made us a very interesting and instructive talk, combined with his personal experience, on "The Diagnosis and Treatment of Placenta Prævia." Dr. C. J. Reynolds covered the ground very thoroughly and made it quite interesting to us on the subject of "Differential Diagnosis and Treatment of Pyelitis in Pregnancy," and Dr. T. E. Vass read us a very thorough, interesting, and instructive paper on "Puerperal Septicemia and Intravenous Therapy in These Cases." The latter will be printed in THE WEST VIRGINIA MEDICAL JOURNAL and we will have an opportunity to thoroughly digest it.

All these subjects were thoroughly discussed and quite a number of interesting points were brought out by Drs. Wallingford, Steele, Rogers, Sinclair, Wade St. Clair, Kirk, and others. This turned out to be one of the most interesting and thoroughly discussed programs we have had for a long time.

Dr. Clements, the new president, made a very interesting talk, commenting on the fact that we saw fit to elect him president during his absence. He said the society has not been doing as well as it could, and that by paying our $15 and getting our names on the roster did not complete our duties to the society—that we could do a lot better if we would. He suggested that we talk to some of the members and try to insist on them writing papers and making these meetings more interesting, more instructive, and more valuable in the future than they have been in the past. Now that we have decided to have but four meetings a year, we should do our utmost to make them the best possible. I

believe it put new "pep" into every member present to see the enthusiastic way our new president conducted the first meeting.

Dr. Wallingford read a letter from Dr. Walter F. Simmons, president of the Raleigh County Medical Society, inviting the Mercer County Medical Society to meet at Beckley some time in the near future in a joint meeting to hear Dr. James Craig and Dr. David Riesman read papers. This invitation was accepted and the secretary was instructed to write Dr. Simmons to that effect.

Dr. David B. Lepper was appointed as a committee of one to look after the Tuberculosis committee which expects to visit Bluefield in the near future, and to coöperate with this committee in any way he saw fit.

With the following eighteen members and two visitors present, we adjourned at 11 P.M.:

Drs. Clemens, Caldwell, F. F. Holroyd, Sam Holroyd, Horton, Kell, Kirk, Lepper, Reynolds, Richmond, Rogers, Sinclair, Wade St. Clair, Steele, Stuart, Vass, Uriah Vermillion, and Wallingford. Visitors: Dr. Bracey, Bluefield Sanitarium, and Dr. Isaac Pierce, Tazewall, Va.

H. G. STEELE, Secretary.

The scientific program for the joint meeting of the Mercer County Medical Society with the Clinch Valley Medical Society in Virginia has just been announced by Dr. Harry G. Steele, secretary of the Mercer county organization. The program will begin with clinics at the St. Luke's Hospital and the Bluefield Sanitarium, to be followed with a banquet at The West Virginian hotel.

The scientific essayists will be as follows:

"Acute Abdominal Pain," by Dr. W. H. Wallingford, of Princeton.

"Hemachromatosis," by Dr. Houston St. Clair, of Philadelphia.

"Pituitary Extract in Obstetrics," by Dr. B. S. Clements of Matoaka.

"Little Things in Obstetrics," by Dr. H. G. Steele of Bluefield.

It has been announced that the members of the McDowell County Medical Society will also be invited to attend the joint meeting, and an attendance of approximately 100 doctors is anticipated.

Dr. Albert H. Hoge, of Bluefield, has recently been elected to serve as president of the Bluefield Rotary Club for the year beginning July 1. He served last year in the office of vice-president. Dr. Hoge was the Bluefield club's representative to the International conference in Belgium in 1927.

Fayette County

The Fayette County Medical Society met at Fayetteville, in the county court room at the court house, Wednesday night, April 9. A record total of 58 paid-up memberships for the year 1929 was reported by the secretary. The Fayette Tuberculosis Association Clinic, which is to be held at Fayetteville on May 1st, 2d, 3d and 4th, was announced.

The announcement was made that there would be a joint meeting of the Fayette and Raleigh County medical societies at the White Oak Country Club the second Tuesday in August. Dr. Charles W. Burr, professor of neurophysiology of the University of Pennsylvania, Philadelphia, will be the guest and speaker.

The death of Dr. Lee, formerly of Harvey, West Virginia, recently of Louisville, Indiana, a former member of the society, was reported.

The scientific program was as follows: Dr. Frank S. Harkleroad, of Harvey, read a paper on "Post-diphtheritic Paralysis," and Dr. J. F. Van Pelt, of Oak Hill, presented a case report.

Following the meeting, refreshments were served.

H. A. WALKUP, Secretary.

McDowell County

The McDowell County Medical Society convened in the offices of Welch Hospital No. 1 on April 10, 1929, in its regular monthly meeting, which was called to order by the president, Dr. Hatfield. Those present were: Drs. Hatfield, Straub, Sameth, Peck, Killey, Newkirk, N. H. Dyer, C. E. Dyer, Justo, Daniels, Van Reenen, Rutherford, and Hartz.

The paper of the evening was presented by Dr. N. H. Dyer, of Bartley, entitled "Toxemias of Pregnancy." Dr. Dyer presented a well-elaborated paper. He spoke of the three predominant types of vomiting in the pregnant woman—the toxic, neurotic, and acute yellow atrophy. The neurotic type best treated by the reassurance and change of environment; that due to acute yellow atrophy with jaundice and progerssive loss of weight usually being fatal. He then differentiated true nephritic toxemia from ordinary eclampsia by saying that nephritis in pregnancy is no different from ordinary nephritis; it begins to show evidence between the fourth and fifth months with headaches and edema of feet and ankles, the urine showing albumen and degenerative

changes in the kidneys, with gradual increase in blood pressure. The loss of vision, which occurs late, is due to albuminuric retinitis. Convulsions may come at the last.

The true eclampsia symptoms begin to show toward the last of pregnancy, with slight headache, general malaise, the urine may show very little albumen; the blood-pressure is low, usually 130 to 140, never reaching as high as true nephritic toxemia, where it may exceed 240. The prevention of both is the early and routine examination of the patient expected to be confined. The usual palliative treatment was then outlined. Dr. Dyer terminated his discourse by saying, "Don't be in haste to induce labor when convulsions just begin in pregnancy."

The discussion was opened by Dr. C. E. Dyer, of Roderfield, and he was joined by all present. The majority agreed that the well-honored Norwood tincture of veratrum is valuable in those cases where the pulse is very rapid, as it slows the pulse down better than any other drug.

Dr. Rutherford had just returned from the State Tuberculosis Sanitarium at Hopemont, where he had been doing thoracic surgery. He praised the well-conducted sanitarium at Hopemont, having a capacity of about 450 patients, and soon to have more, with the completion of the new children's hospital that is now in progress. He mentioned the excellent treatment of tuberculosis that this state, as well as others, is doing in this field with the introduction of surgery in selective cases. On his way home he visited the Rutherford Sanitarium at Beckley, which is expected to be ready for occupancy by the first of August.

There being no other important matters brought to the attention of the society, the meeting adjourned at ten o'clock.

A. G. RUTHERFORD, Secretary.

Marshall County

Under the new president, Dr. Benj. F. Bone, the Marshall County Medical Society has had one prominent physician at Moundsville and will have another at its next meeting, May 14, 1929. For the April meeting Dr. Jonathan Forman, of Columbus, was the scientific essayist. Dr. Forman is a physician of national prominence and the society was elated over his appearance on its program.

The April meeting was held in Dr. Bone's beautiful home on Fifth street, Moundsville. There were many visitors present and practically all of the active physicians in the county attended. Dr. Forman read a paper on "The Relationship of the Urinary Tract in Diagnosis." It was declared by all present to have been one of the best papers ever read before the local society. After the society had discussed Dr. Forman's paper and attended to routine business, Dr. and Mrs. Bone and Miss Margaret Bone were hosts to the society and visitors at a chicken dinner. All present at this meeting reported as having had a most delightful time, and say that Mrs. Bone and Miss Margaret were most charming in their manner in helping the president entertain his guests.

The society will have as the next speaker Dr. John Phillips, of Cleveland. Dr. Phillips is another nationally known physician. He will be in Moundsville on May 14, 1929. Dr. Phillips will be the honor guest at a dinner held on that occasion.

Members present at the last meeting were Drs. Bone, M. J. Fortney, C. S. Fortney, A. S. Ashworth, D. B. Ealy, J. A. Streibich, C. G. Morgan, J. E. Arnold, L. H. McCuskey, J. H. Luikart, J. E. Cooper, Drs. Wilson and Bell of Cannonsburg, Pa., R. U. Drinkard, J. O. Rankin, and W. A. Quimby of Wheeling, Dr. Myers of Glendale, and Dr. C. E. Hutchinson and Dr. F. E. Roberts of Moundsville.

Applications for membership in the Marshall County Medical Society have been received from Dr. C. E. Hutchinson and Dr. F. E. Roberts, of Moundsville, and Dr. J. W. Myers and Dr. G. N. Cunningham, of Glendale.

D. B. EALY, Secretary.

Central West Virginia

The regular quarterly meeting of the Central West Virginia Medical Society was held at the Yew Pine Inn, Richwood, on the evening of April 10, with approximately fifty members and visitors in attendance. The scientific program preceded a banquet served at the Richwood hostelry.

Four scientific papers were presented during the evening. Dr. R. A. Ireland, of Charleston, talked on "Acute Endocarditis," with lantern slides from electrocardiograph tracings. Dr. R. H. Walker, of Charleston, presented a paper on "Fractures," with lantern slides. Dr. M. C. Borman, of Montgomery, presented a paper on the subject, "Information from the Examination of the Pulse at the Wrist." Dr. James McClung, of Richwood, presented some unusual cases of appendicitis, with reports of cases.

S. S. HALL, Secretary.

Central Tri-State

The council of the Central Tri-State Medical Society has just announced the annual spring meeting, which will be held in the new Masonic Temple at Portsmouth, Ohio, on Thursday, May 16. Heretofore the sessions have been held in Huntington. The change was made at the request of the Portsmouth doctors because of the appearance of Dr. David Riesman, of Philadelphia, a former Portsmouth resident, on the program. The complete program follows:

"Symptoms and Treatment of Early Heart Failure," by Dr. David Riesman, of Philadelphia.

"Goiter," by Dr. Frank Lahey, of Boston, Mass.

"Actual Results of Surgical and Medical Treatment of Gastric and Duodenal Ulcer," by Dr. Lewis Gregory Cole, of New York City.

"The Recent Developments in the Etiology and Treatment of Rheumatic Fever," by Dr. James C. Small, of Philadelphia.

J. S. KLUMPP, Secretary.

Ohio County

Dr. W. H. Guy, of Pittsburgh, was the scientific essayist at the April 12 meeting of the Ohio County Medical Society, which was held in the Wheeling Elks' Club. Dr. Guy's subject was "The Differential Diagnosis and Management of Syphilis." The discussion was opened by Dr. H. T. Phillips and Dr. R. J. Armbrecht, both of Wheeling.

H. W. BOND, Secretary.

Barbour-Randolph-Tucker

The regular bi-monthly meeting of the Barbour-Randolph-Tucker County Medical Society was held at the Hotel Tygart, Elkins, on the evening of March 28. The meeting opened with an excellent dinner, served at six o'clock, and followed with the scientific program. The program consisted of a lecture, with motion pictures, on "The Preparation and Uses of Biological Products." A good attendance turned out for this session.

J. C. IRONS, Secretary.

Kanawha County

The April ninth meeting of the Kanawha Medical Society convened at the usual time in the auditorium of the public library building, with sixty members in attendance. Dr. R. H. Walker, president, presided at the meeting.

Dr. Emil Novàk, eminent gynecologist of Baltimore, was the honorary speaker of the evening. He presented a very interesting lecture on "Two Important Types of Menopausal Hemorrhage." The speaker's knowledge of the subject, as well as his manner of address, gave his listeners a very comprehensive and detailed analysis of the many problems that confront the general practitioner as well as the gynecologist each day. To describe his lecture in the words of one of the members present would be quite modest: "Dr. Novàk's lecture was one of the best post-graduate courses that I have had for many years."

Discussion of Dr. Novàk's paper was made by the following members: Drs. J. R. Shultz, E. F. Gott, J. Ross Hunter, R. A. Ireland, R. K. Buford, W. A. McMillan, J. E. Cannaday, Robertson, T. W. Nale, C. L. Lyon, and M. I. Mendeloff.

RUSSEL KESSEL, Secretary

ANNOUNCEMENTS

Hoffmann-LaRoche to Move

The Hoffmann-LaRoche Chemical Works have secured a tract of land at Nutley, New Jersey, 12 miles from New York City, and are there erecting their new laboratories. Ground was broken with appropriate ceremonies last November, and the construction work has been pushed with such vigor that it is hoped the company will be able to move from its present quarters, 19 Cliff Street, New York City, to New Jersey early in May. Dr. Emil Barell, director of the Hoffmann-LaRoche activities in Europe, was present at the November ceremonies and turned the first shovelful of earth. Mr. Elmer H. Bobst, general manager of the company, made an address full of hope and faith in the growth and success of the Roche organization.

"Council Passed"

Notification is being sent to the medical profession that the well-known and deservedly popular Haley's M-O, magnesia oil, has been accepted for New and Non-official Remedies of the American Medical Association. Henceforth, the product will be known as Magnesia-Mineral Oil (25) Haley. It is a combination of liquid petrolatum and milk of magnesia in the form of a permanent, uniform, unflavored emulsion. The taste is not at all unpleasant and the absence of any distinct flavor prevents the habitual user from growing tired of it.

The value of mineral oil as a lubricant and emollient for the treatment of certain forms of constipation has been well established. In many cases,

Annual physical examinations are recommended by the commissioner as the best way of cutting down the tuberculosis rate. Under the trained eye and ear of a physician, symptoms unnoticed by the ordinary person can easily be detected and steps taken to correct them.

The records for 1928 show that 56 per cent of the tuberculosis deaths in this state occurred among persons between 20 and 50 years of age, or at a time when the earning capacity and responsibilities are the greatest. This results in an enormous economic waste, which should be prevented since tuberculosis is recognized as a curable disease in 96 per cent of the cases if discovered and treated in its early stages.

That tuberculosis is no respecter of ages is shown by the fact that 52 children under five years of age died from this disease in 1928 in this state, and one woman who was over 90. However, the eary twenties showed the greatest number of deaths, 273 being recorded between 20 and 29, while 228 were recorded from 30 to 30; 186 from 40 to 49; 131 from 50 to 59, and 123 from 10 to 19.

That women fall victims to this disease more readily than men is shown by the fact that 103 more deaths occurred among females than among males. This is particularly noticeable between the ages of 10 and 40, when 379 female deaths were recorded as against 244 male.

State Laboratory Work

The March report of the State Hygienic Laboratory, made to Dr. W. T. Henshaw, state health commissioner, shows a marked increase in the amount of work done and specimens examined. During March, 1929, a total of 2,211 specimens were examined as against 1,971 during the same month the previous year, bringing the total examinations for the first three months of this year up to 5,531.

The following specimens were reported examined: Diphtheria 18, Widals for typhoid fever 9, feces for detecting typhoid carriers 4, intestinal parasites 15, Kahn test for syphilis 1,423, spinal fluid for syphilis 4, gonorrhea 289, tuberculosis 106, rabies 7, urines 9, water examinations 319, miscellaneous 9.

Dr. Elizabeth I. Parsons, director of the laboratory, is assisted by three bacteriologists.

Infectious Diseases

Surgeon General H. S. Cumming, in a recent report, mentions some of the activities of the United States Public Health Service in connection with the prevention of the spread of contagious and infectious diseases in interstate commerce. It is pointed out that bubonic plague continues to exist and spread among ground squirrels in California and constitutes an increasing menace to the public health both in large centers of population and to individuals in the infected territory. The occurrence of two human cases of bubonic plague during the past fiscal year, contracted from ground squirrels, emphasizes the potential danger which exists. Measures thus far carried out by the state and local authorities for the control of this infection are not sufficiently extensive or intensive to prevent its menace. The work of the Public Health Service is limited to anti-squirrel measures around centers of population in an effort to prevent infection of cities, which would endanger commerce and interstate traffic.

Upon the occurrence of the serious flood emergency in New England, sanitary engineers were detailed to coöperate with the state health authorities in safeguarding water supplies and reëstablishing public water systems when this work was necessary.

The occurrence of epidemic diseases has been averted in the area affected by the Mississippi flood; and through the establishment of health measures necessitated by the flood, an emergency foundation is being built for a permanent program of public health work which will reduce the incidence of disease and result in generally better conditions in that area. This public health work is conducted on a coöperative basis in which the states and counties recognize their responsibilities and provide funds to the extent of their ability.

The value of the public health program developed in the flooded area was demonstrated during the latter part of the fiscal year 1928 in certain sections where a second flood occurred. It was found that the full-time health units in such affected counties were able to meet their local situation without further federal or state aid. This demonstrates the value of a permanent public health department to meet unusual conditions.

Measures for the prevention of the interstate spread of disease, including the supervision of water supplies used on common carriers, the sanitary control of shellfish, the supervision of sanitation in the national parks, and trachoma eradication have been successfully carried out.

FROM OTHER JOURNALS

Watch Your "Endorsements"

Another good reason why physicians should make a routine practice of consigning to the wastebasket requests for free advice that come from unknown sources has bobbed up within the past few weeks.

Dermatologists have been the target for this latest in questionnaire nuisances. They have been bombarded with a letter from Cincinnati, signed, "National Research Bureau, by M. M. Downing."

The letter opens with the statement that the "bureau" has been told by a "well-known authority that more than 90 per cent of all people suffer from the most common forms of 'skin disorders,' such as acne, blackheads, freckles, muddiness, etc." The bureau wants dermatologists to answer four questions on this abstruse subject.

Investigation has proved that the National Research Bureau is merely an imposing name used by an advertising agency and that M. M. Downing is listed in the Cincinnati directory as a stenographer. It is to be assumed that the opinions sought would be used to promote somebody's soap or ointment.

Commenting editorially on the case, the *Journal of the American Medical Association* says:

"Obviously, there is not the slightest justification, either economic or moral, for sending out a questionnaire to the medical profession on the stationery of an imposing named organization that exists only on paper. If advertising concerns wish to get expert testimony from the medical profession, the least they can do is to make it plain to physicians that such information is desired for advertising purposes. Of course, so long as physicians continue to answer questionnaires from sources of which they know nothing, so long, doubtless, advertising concerns and others will take advantage of their easy-going tolerance."—*Ohio State Medical Journal.*

What Are "Drug" Stores?

The popular and growing impression on the part of many that the modern drug store is becoming a miniature department store and that the time soon will arrive when the only thing not dispensed in many drug stores will be drugs was dealt a blow recently by a government investigation which shows that about three-fourths of what the drug store sells really are drugs.

E. M. West, writing in *Advertising and Selling*, declares that many undoubtedly will be surprised "to learn that drugs still total more than 79 per cent of the total sales of drug stores—at least in nine of the eleven cities canvassed by the recent distribution census conducted by government agents."

Mr. West, in his discussion of this topic, points out that:

Drugs, chemicals and prescriptions bring in more than double the sales of all other types of commodities sold in the drug stores of Chicago, San Francisco, Kansas City, Baltimore, Atlanta, Seattle, Providence, Denver, and Syracuse.

No other class of commodity, in fact, brought in 10 per cent of the total sales.

Only three other classes reached any considerable volume—candy, ice cream, and soft drinks; cigars, cigarets, and tobaccos; toilet articles and preparations. With drugs, these three classifications and food account for over 96 per cent of the total of all sales.

This means that all other goods sold in the drug stores of the nine cities canvassed bring in a bit over four and a half million dollars out of a total sale of $149,899,200, or a little more than $1,000 a year per store for the 4,340 drug stores in these cities.

Of the $149,899,200, an amount of $105,134,-200 was taken in from sale of drugs, chemicals and prescriptions; $14,907,900 for candy, ice cream, and soft drinks; $11,602,700 for cigars, cigarets, and tobaccos; $11,533,800 for toilet articles and preparations; $2,037,200 for meals and four other classifications, and $4,683,400 for 26 other classifications of articles.—*Ohio State Medical Journal.*

Generalized Journals

At the last meeting of the American Medical Association, it was pointed out in certain of the reports that a generalized medical journal is of particular value because the general practitioner needs to have a knowledge of the specialties, and, we should add, because a specialist needs to have a sympathetic understanding of the problems which arise in general practice and in other specialties.

No one branch of medicine can afford to isolate itself from the other branches, for the human cosmos refuses to work in this way. Just as one organ of the body is interdependent on all the other organs, so is one specialty of medicine dependent upon all others. Too often does the condition of the eye-grounds indicate systemic disease; too often does a disease of the skin arise from generalized conditions; too often is mental disease due to physical causes; too often does a surgical result hinge upon a correct

medical decision; too often is a medical or surgical diagnosis dependent upon laboratory or röntgenologic interpretation. "No man liveth unto himself," and no physician practiceth medicine unto himself. Coöperation is a vital necessity; and properly to coöperate, some understanding of the problems met in other fields is essential.

Some of the section officers, in discussing the schedule of our 1928 state society meeting, stated that the members of their sections did not attend the general meetings. With all due deference to these very capable men, we believe that they are wrong. The best specialist is he who has the broadest understanding of general problems, and the greatest value in a general program or a generalized journal is in bringing together these diverse elements of the medical profession. If the diverse elements refuse to attend the general program or to read the generalized journal they are losing a contact with their fellows which should go far toward humanizing the specialties.—*Pennsylvania Medical Journal.*

Radiant Therapy

For several years much has been said and written about the remarkable results achieved by the use of so-called "radiant energy" in the treatment of disease. Its effects in energizing growth and development of young animals and in the control and treatment of an unnumbered list of pathological conditions have been recounted in the medical and popular scientific journals and in the lay press. Companies have been formed to manufacture and exploit many devices for producing some or all of these forms of energy. These devices vary from simple colored electric-light bulbs and hot-wire electric heaters to the so-called carbon arc and quartz lamps. All these devices have been sold to physicians who have used them widely with no adequate knowledge of their properties or effects except that obtained from the glib-tongued salesmen. Having exhausted the visible supply of dupes in the medical profession, these salesmen are now turning to the general public for a market, and the devices formerly sold to the medical profession are being advertised in the lay press and sold in department stores and electrical shops to the laity "with complete directions for use." Even the bathing beauties of the Broadway theatres are being given their coat of tan by spraying them with quartz light instead of rollicking on the beaches in Florida.

At this time there comes a professor, Donald C. Stockbarger, assistant professor of physics at the Massachusetts Institute of Technology, who tells us in *The Technology Review* what we have all long suspected but were not willing to admit; namely, that we know very little about the nature of the "radiant energy" we are employing and still less, perhaps, about the method of its production. He also says that the conditions under which these various wave lengths are produced are very uncertain and that at this time so many variable and uncontrolled factors enter into their production that we have little or no real knowledge as to the nature of the forces we are using. He furthermore states that at present we know even less about the effect of these forms of energy on living tissue either normal or pathological.

It would seem that with such a slender background of real knowledge it might behoove physicians at present to be a little conservative in their attitude regarding the use of so-called "radiant therapy" and especially about advising patients to purchase and use these devices indiscriminately, bearing in mind the fact that we do not yet know even the harm that may come from the use of such measures or the dangers that may lurk in their employment.—J. F. S., *Wisconsin Medical Journal.*

New and Non-Official Remedies

Syrup Ephedrine Hydrochloride (Double Strength), Swan-Myers.—It contains ephedrine hydrochloride-Swan-Myers (New and Non-Official Remedies, 1928, p. 176), 0.4390 gm., in 100 c.c. (¼ grain per fluid drachm), and alcohol 12 per cent. Swan-Myers Co., Indianapolis.

Squibb's Mint-Flavored Cod-Liver Oil (Cod-Liver Oil—Squibb) (New and Non-Official Remedies, 1928, p. 253).—Containing 0.67 per cent of oil of spearmint as flavoring. E. R. Squibb & Sons, New York.

Tetanus Antitoxin (Bovine).—A tetanus antitoxin, concentrated (New and Non-Official Remedies, 1928, p. 357), derived from the blood serum of cattle immunized against the toxin of *Bacillus tetani.* Marketed in packages of one syringe containing 1,500 units (one immunizing dose). H. K. Mulford Co., Philadelphia.

Capsules Ovarian Substance, Desiccated—P. D. & Co. (5 grains).—Each capsule contains 5 grains of ovarian substance, desiccated (New and Non-Official Remedies, 1928, p. 290). Parke, Davis & Co., Detroit.

Tablets Whole Ovary—Lederle (2½ grains).—Each tablet contains 2½ grains of whole ovary. (New and Non-Official Remedies, 1928, p. 292.) Lederle Antitoxin Laboratories, New York.

Rabies Vaccine—Gilliland (Semple Method).—Antirabic vaccine (New and Non-Official Remedies, 1928, p. 363), prepared according to the general method of David Semple (phenol killed). Marketed in packages of 14 syringes, each containing 2 c.c. The Gilliland Laboratories, Inc., Marietta, Pa.

Antipneumococcic Serum (Type 1).—This antipneumococcus serum (New and Non-Official Remedies, 1928, p. 361) is also marketed in packages of one 50-c.c. gravity container. E. R. Squibb & Sons, New York.

Antistreptococcic Serum—Squibb. — This antistreptococcus serum (New and Non-Official Remedies, 1928, p. 362) is also marketed in packages of one 50-c.c. gravity container. E. R. Squibb & Sons, New York. (*J. A. M. A.*, December 8, 1928, p. 1805.)

Salyrgan-Mersalyl-Sodium }o-[hydroxymercuric-methoxy-propylcarbamyl] phenoxy }acetate.—Salyrgan contains 39.6 per cent of mercury in nonionizable form. Salyrgan has been demonstrated to exert a destructive action on the spirochete of syphilis in rabbits, but is used chiefly as a diuretic. It induces diuresis only provided sufficient renal tissue is still intact, and is therefore contraindicated in acute diseases of the kidney as well as in advanced nephritis. It is effective in ascites and edema of cardiac and cardiorenal origin; also in ascites resulting from cirrhosis of the liver. Salyrgan is supplied only in the form of a 10 per cent solution in ampules of 1 c.c. and 2 c.c. H. A. Metz Laboratories, Inc., New York.

Bromipin 33 per cent—Brominized Sesame Oil 33 per cent—Merck.—A bromine addition product of sesame oil, containing from 31 to 35 per cent of bromine in organic combination. It acts like the inorganic bromides. The combination is not broken up in the stomach, but a portion of the bromine is split off in the intestine; the remaining compound is readily absorbed and largely deposited in the tissues, where it is slowly split up. The product is also used as a contrast medium for röntgen diagnosis of the tracheo-bronchial tree. It is stated to be applicable in cases of mild or medium tuberculosis in which the use of an iodized oil is contraindicated. Merck & Co., Inc., Rahway, N .J. (*J. A. M. A.*, December 22, 1928, p. 1995).

GENERAL NEWS

The Recent Influenza Epidemic

The influenza outbreak which began on the Pacific Coast in the early fall of 1928, and rapidly spread to all parts of the United States and Canada, passed its peak in the early part of January. Since the middle of that month the death-rate for influenza and pneumonia combined has been declining sharply and is now rapidly approaching the usual late-winter level for these diseases.

The course of the influenza-pneumonia mortality rate, week by week, during the outbreak up to the week ended February 23d, relates to the mortality experience among approximately 16,000,000 industrial policyholders of the Metropolitan Life Insurance Company, living in the United States east of the Rocky Mountains. The death-rate for these diseases, except in the Far West, did not begin to rise until the week ended November 17, 1928. For the next three weeks there was observed nothing more than the usual seasonal increase expected at that time of the year; and the mortality did not exceed that for the same period of 1927. At mid-December, however, the rate rose sharply, and this continued during the remaining weeks of 1928. During the first three weeks of January, the death-rate rose abruptly; it more than trebled between the first and nineteenth of that month. Since that time, the fall in the curve has been almost as sharp as was the rise.

These data, which relate to the industrial wage-workers of the country, will supplement the facts published for the general population by the United States Public Health Service, and are in agreement therewith. The Health Service observations show that the peak death-rate was reached in the week ended January 12th. The insurance data are tabulated according to the dates on which the death claims were paid rather than on the actual date of death. This explains the difference of a week in the peaks shown by the two experiences. The figures show definitely that the high point in the mortality during the recent outbreak was reached during the week ended January 12th.

During the earlier weeks of the outbreak, the mortality rate for influenza-pneumonia remained well below the average for the corresponding weeks of the five years, 1923 to 1927. Beginning with the week ended December 15, 1928, it was 15.4 per cent above the average, and this excess rose, in successive weeks, to 33.1 per cent, 41.5 per cent,

49.8 per cent, 80.3 per cent, and 121.2 per cent, the last figure being for the week ended January 19th. Since then, the per cent of excess has declined continuously and stood at only 14.3 per cent for the week ended February 23d.

The mortality resulting from the recent invasion had the age characteristics of endemic influenza, such as prevailed in 1915, 1922, and several other years. That is, children and old people were chiefly affected, whereas, in the great pandemic of 1918-1919, the maximum death-rate was recorded between 25 and 45 years, with the high crest at the age-division 25-34 years. There are other indications that the recent outbreak was of a different type from that of 1918.

Tear Gas Warning

Tear gas is used in a new fumigation process adopted by the Public Health Service "to serve as a warning agent," according to a statement made public March 4. The full text of the statement follows:

In connection with the prevention of the introduction of quarantinable diseases into the United States, the Public Health Service maintains maritime quarantine stations at all the principal seaports in the United States and its possessions through which all ships from foreign ports must pass prior to entering the port. When ships arrive from foreign ports where quarantinable disease exists, they usually are required to undergo fumigation for the destruction of rodents and insects which might convey infection.

In order to improve the efficacy of fumigation and to reduce the amount of ship's time required for proper fumigation, the Public Health Service is constantly devising new and improved methods in fumigation procedure.

A recent report issued by the Public Health Service deals with the latest experiments made in connection with the use of the poisonous cyanogen products in the fumigation of vessels. This report accentuates the advisability of using cyanogen products which include a sufficient amount of tear gas to serve as a warning agent.

The subject of ship fumigation is one of the greatest sanitary importance. Until a more efficient method for the eradication of potentially plague-infected rodents is devised and its dependability proved beyond reasonable doubt, fumigation will continue as the procedure of choice.

Dr. Goldberger Honored

A description of the researches and accomplishments of the late Surgeon Joseph Goldberger, of the Public Health Service, outstanding among which was his discovery of the cause and cure of pellagra, the dietary disease, is given by the Public Health Service in a statement recently made public.

Dr. Goldberger studied the problem presented by the wide prevalence of pellagra for 14 years before he ascertained its means of prevention, the statement said. The disease had been known for centuries, but it remained "essentially an enigma until the masterful researches of Dr. Goldberger revealed its essential cause and provided rational and simple means for its prevention and cure."

After finding that a deficient diet caused pellagra, Dr. Goldberger found that a proper diet would cure it. Later, he found that "black tongue," a disease of dogs, is pellagra in the dog, and likewise cured it by correcting the diet.

Dr. Goldberger also contributed to medical knowledge in other lines of research, the statement said. His greatest contribution, however, which the Public Health Service believes "is destined to take its place among the classic major accomplishments of medical science," was his pellagra work.

On March 4, President Coolidge approved a special act of Congress granting a pension of $125 per month to the widow of Dr. Goldberger, in recognition of his services in discovering the cause of pellagra and the means of its prevention and cure.

Fraudulent Advertising

Publishers of a periodical printing fraudulent and indecent advertising have signed a stipulation agreement with the Federal Trade Commission to abandon publication of advertising that does not truthfully represent either the products advertised and offered for sale or results obtained from use of such articles.

Signing of the stipulation by the company of its own accord obviated the necessity of formal proceedings on the part of the commission.

While the name of the corporation can not be revealed, according to the commission's rule regarding publicity of stipulation proceedings, the facts in the case are made known.

This stipulation is in part a result of policies evolved at a trade practice conference of periodical publishers last October, when the industry sought to determine ways of eliminating fraudulent advertising and of encouraging publishers to assume respon-

sibility for rejecting advertising that was obviously fraudulent, indecent, or otherwise objectionable.

The advertisements complained of in the present instance were in the January, 1929, issue of one of the magazines published by the company.

Typical specimens are as follows:

"New Youth-Giving Belt Reduces Waist Line Quickly." This headline was above the following: "Instantly makes you look inches thinner and years younger and actually massages away fat every second while you wear it!

"The moment you put on this new self-massaging belt your waist is instantly reduced from two to four inches! You are filled with a wonderful new energy and look and feel ten to fifteen years younger!"

"Gland Glad. Papa's Silent Partner," read another caption. This advertisement averred that use of this substance "brings quick animation, ready response, lingering satisfaction. If your vitality is low gladden your glands. Let 'Papa's Silent Partner' make you look and feel younger than your years. Be a he-man," it advised.

The advertising in question was broad in scope. Under another caption, "My Tires Cost Me Nothing," an alleged vaporizer was said to "more than double gasoline mileage!"

"X-Ray Kathoscope" was the heading of an advertisement suggesting to each reader, "See your best girl and all she is doing. You see everything."

"If you were down and out," read the headline on another page; "if you are earning a cent less than $100 a week—$5,000 a year—here is your chance to break into real estate my way—build a big-profit business of your own—right at home—in your spare time—without capital or experience."

Another advertisement offered "amazing profits" in a short time.

An alleged treatment for "Blood Diseases" was described as follows: "No matter how bad or old the case, or what's the cause," "Treatment used successfully for over twenty-five years in the most severe and chronic cases."

Advertised "For Men" were "French Pep Tablets—the most efficient on the market. For men who need Vigor, Pep, and Energy."

"What made my hair grow?" asked a headline on another display. "Two years ago I was bald all over the top of my head; I tried different preparations but they did no good. I remained bald until I used . . . New hair came almost immediately and kept on growing. In a short time I had a splendid head of hair which has been perfect ever since and no return of the baldness." This testimonial was accompanied by a picture of a man with a heavy growth of hair.

A line reading, "Sex Explained," appeared over the following:

"Sex truth at last. The science of a new life. Explains the sex appeal, choosing a mate, blissful marriage, how babies are conceived and born, sex diseases, what to avoid, etc. Birth control chapter."

In other advertisements were miscellaneous captions and texts such as:

"Are you afraid to love? Does a petting party stop with a kiss or does it go further? Is spooning dangerous? At last the question is answered."

"Has true love come into your life—or didn't you recognize it when it came? Are you afraid now of the baffling, perplexing mysteries of sex relationship? Are you discontented with the stupid lies and furtive, ashamed answers the world gives you in place of the naked, fearless truth you desire? Do you want some safe, sane, unashamed advice on sex questions? Clip coupon below."

"Women—There's Dollars and Sense in Prevention."

"Men—Big Pay. South American work. Companies pay fare, expenses."

"Liquor or drug habit cured or no pay. Two dollars if cured. Tobacco or snuff habit cured or no pay. $1.50 if cured."

Various matrimonial bureaus carried advertisements, one offering such inducements as "Ladies worth $75,000, $100,000, $200,000, $300,000. Quick results positively guaranteed." Another pleaded: "Try me first. Pay when married."

The commission found all the advertisements complained of to be fraudulent, and many suggestive and indecent.

The company, in signing the stipulation, agreed that if it ever resumed or indulged in any of the practices in question, the stipulation as to the facts as made by the commission may be used in evidence against it in the trial of the complaint which the commission may issue.

State Tuberculosis Meeting

It is announced that the eighth annual meeting of the West Virginia Tuberculosis and Health Association will be in session for two days at Parkersburg on Wednesday and Thursday, May 1 and 2. The problems up for discussion are: Tuberculosis in childhood, segregation and treatment of advanced cases, plans for conducting a statewide clinic service, edu-

cational activities of county seal-sale agencies and results of the 1929 early diagnosis campaign.

The program is being planned in coöperation with the Wood County Tuberculosis League. A special committee is making local arrangements for the entertainment of delegates and visitors. At the time of the convention a new recreation pavilion will be dedicated at Wayside Farm, a preventorium conducted near Parkersburg by the county league.

An effort is being made to obtain a large attendance on the part of persons in any way interested in social welfare and public health work, according to information given at the headquarters of the state association in Charleston. It is stated that county seal-sale agencies are expected to send several delegates to represent them and that the general public is cordially invited to attend all of the meetings. In order that ample accommodations may be provided at the hotels and for the various functions, it is requested that reservations be made with the state headquarters in advance.

One of the featured speakers will be Dr. Walter L. Rathbun, superintendent of the Newton Memorial Hospital of Cassadaga, N. Y., who for several years has been making a special investigation of tuberculosis among high school students and whose published reports of the results have attracted nationwide attention.

Dr. H. E. Kleinschmidt, chief of the division of health education, on the staff of the National Tuberculosis Association, under whose guidance the early diagnosis campaigns were prepared, will discuss the value and methods of promoting county educational service programs.

Dr. J. G. Pettit, president of the state association and superintendent of Hopemont State Sanatorium, will give an address, illustrated by lantern slides, explaining the work being done at that institution with special reference to the kind of cases that can be given treatment there and which will respond most readily for early and complete recovery.

Dr. Harry M. Hall, of Wheeling, president of the West Virginia State Medical Association, will deliver an address concerning the relationship of the medical profession to volunteer health associations.

Dr. John Thames, director of the Kanawha County Health Unit, will consider the problem of advanced cases of tuberculosis with reference to what may best be done for their care and treatment. His paper will be discussed by H. E. Odgers, superintendent of the Parkersburg schools.

Dr. O. F. Covert, medical director of the Marshall County Tuberculosis Sanatorium, will explain the advantages of county sanatorium work in relation to other forms of local health programs.

Dr. S. M. Prunty, of Parkersburg, will present a paper on the subject of housing and sanitation, with special reference to the prevention of tuberculosis.

"Bill Bartlett," founder of the National Keep-Well Club, who is now visiting schools in West Virginia under the direction of the state association, will attend the meeting to impart his abundant enthusiasm to the proceedings.

Tonsillectomy

It has long been recognized that the operation of tonsillectomy in adults is by no means as simple a procedure as it is in young children. For this reason, any technique that would overcome the objectionable features of the operation in adults has always been regarded as desirable. With the development of surgical diathermy which may be employed as electrocoagulation or as electrodesiccation, it was found that tonsils can be completely dissolved by the utilization of one or both procedures. When properly performed, it is said that surgical diathermy for the enucleation of tonsils has few disadvantages. Caution must, of course, be exercised in order to avoid the destruction of important uninvolved anatomical structures. If not, secondary hemorrhage as a likely sequence must be considered as a possibility.

The enucleation of tonsils by diathermy has attracted wide interest, and there are some who are most enthusiastic about it while others condemn it vigorously. A considerable amount of literature has accumulated in the past two years concerning this method of tonsillectomy, and an attempt has been made to reconcile the disparity of opinion expressed in order to set forth the present status of the subject for our readers.—*International Medical Digest.*

Spectacle Quacks

The eyesight of thousands of persons is being jeopardized by spectacles sold through newspaper and magazine advertising by unscrupulous mail-order houses, according to the National Society for the Prevention of Blindness, which brands the operations of these firms as "both a fraud and a menace." This warning has been sent to publishers throughout the United States in a special bulletin of the National Better Business Bureau. In the same bulletin, the society also terms as "quackeries" the mail-order courses in eye exercises which adver-

tise a relief from eye-strain and defective vision, without a thorough examination.

"It is impossible for glasses to be properly fitted by mail, and in most cases attempts to do so will result in harm to the eyes of the wearers," says the society. "These mail-order houses are selling glasses without asking for any symptoms, without testing the vision of the prospective purchaser, and without even an inquiry as to the condition of health of the eyes. These optical quacks ask merely: 'How old are you?' 'How many years have you worn glasses, if any?' and 'What is the shape of your face—round or slender?' Upon this information they offer to fit any person with glasses, promising 'the most perfect vision of any lenses you can get.' 'These splendid glasses,' their circulars promise, 'will enable any one to read the smallest print, thread the finest needle, see far or near, and will prevent eye-strain or headache.'

"Investigation has shown that the glasses which are actually sent are simply a fair grade of magnifying glasses mounted in an extremely poor grade of frame. These are advertised as 'scientifically ground and curved lenses.' The glasses do nothing that the exploiters claim for them—they do not often relieve eye-strain, they do not fit any eyes except by mere chance. The National Society for the Prevention of Blindness feels that this is a dangerous situation. It has become a well-established fact that fitting of glasses where needed requires an examination and eye test by a qualified specialist, and special glasses for each case made upon prescription.

"Probably the most serious aspect of the question, from the standpoint of the prevention of blindness, is the missed medical problem. Many disease conditions which finally result in partial or complete blindness first produce disturbances of vision which are only temporarily corrected, hence concealed, by lenses. In the absence of a complete eye examination when glasses are prescribed, the underlying evidence of eye disease, frequently an indication of disease of the general system, may be overlooked until it is too late to prevent blindness and widespread physical disaster."

Child Personality

It is not safe to prophesy the future personality of a child until he has passed the adolescent age, says Dr. Charles W. Burr, who writes of mental disease in young people in *Hygeia* for October, 1928.

The precocious boy, who is defined as one developing rapidly and one-sidedly, often becomes eccentric and not infrequently breaks during adolescence.

The boy of whom a normal, healthy future, barring the accident of brain disease, can be foretold, is he whose emotional reflexes respond healthily, who is not cruel after he is old enough to know what cruelty means, who accepts the school boy's code of honor, lies but seldom and always with a motive, steals not at all or only incidentally as an episode of adolescence, and who develops intellectually evenly.

Compression Fracture of Vertebræ

Suggestions as to treatment of compression fractures of the vertebræ are made by C. F. Eikenbary (*Journal A. M. A.*, Dec. 1, 1928). His paper is based on a study of 131 cases, plus the knowledge gained from examining the records in seventy-five other cases. Early diagnosis is the most important step in the treatment. Rest in bed for three months, followed by the wearing of a well-fitting brace for at least one year, is essential. Fusion operations certainly have some place in the treatment, particularly if performed early, but their value is greatly overestimated, and they should by no means be a routine procedure.

Deafness Prevention

A plan for research into the cause, cure, and prevention of deafness has just been announced by the American Otological Society. While a fund of $2,500,000 will eventually be sought to finance the complete plan, an immediate campaign to raise $500,000 by July 1st and thus continue a program of research started through a grant by the Carnegie Corporation four years ago has been started. The campaign was launched at a dinner given at the New York Academy of Medicine by the Board of Trustees of the Research Fund on Tuesday, March 12, to a group of interested laymen and physicians.

Dr. Edward B. Dench, New York otologist, in a brief address at the dinner, emphasized the social and economic handicaps which victims of deafness must face. He spoke of the inadequacy of the present scientific knowledge on the analysis of diseased conditions of the ear.

"In the pathological departments of all our hospitals in New York—and they are most excellently manned—I personally know of no pathological department in this city which could intelligently deal with microscopic analysis of the many conditions found in the temporal bone which causes progressive

deafness. In other words, progress of investigation of this kind must be slow. To a certain extent it will be necessary to use our funds to train men in this special work, particularly in the preparation of specimens and in the interpretation of microscopical pathological conditions."

Summer Clinics

The Chicago Medical Society will hold a two-weeks' clinics at Cook County Hospital, June 17 to 29, inclusive. Members of the hospital staff will give these clinics on the following schedule:

8 to 10 A.M.—Medical and surgical clinics in amphitheatres.
10 to 12 A.M.—Ward walks.
12 to 1 P.M.—Luncheon.
1 to 3 P.M.—Medical and surgical clinics in amphitheatres.
3 to 5 P.M.—Ward walks.

The amphitheatre work will be devoted to medical and surgical dry clinics and lectures. Two amphitheatres will be used simultaneously, one for medical and one for surgical clinics. Each clinic will be one hour in length, thus giving four medical and four surgical clinics daily. Operative work will be done during the hours devoted to ward walks. The clinical work will be confined largely to general medicine and surgical subjects.

It is planned to hold six meetings, to be addressed by speakers other than members of the hospital staff on such subjects as heart disease, tuberculosis, obstetrics, physiotherapy, gastrointestinal disorders and possibly diabetes.

A registration fee of ten dollars will be charged to cover the cost of preparing for and conducting the clinics.

For further information apply to the Chicago Medical Society, 185 N. Wabash Ave., Summer Clinics Committee.

Venereal Diseases

The importance of venereal diseases as a public health problem has been stressed in a recent report made public by Surgeon General H. S. Cumming, of the Public Health Service.

The venereal diseases are more and more being recognized as one of the most important of the public health problems. As progress has been made in decreasing markedly the prevalence of certain preventable diseases such as typhoid fever, hookworm disease, malaria, yellow fever, diphtheria, and tuberculosis, those diseases the prevalence of which has not been so markedly reduced assume even greater relative importance. This is particularly true of the venereal diseases.

The studies initiated during the preceding fiscal year in connection with the venereal diseases have been continued and expanded. These have included field studies of the prevalence of syphilis and gonorrhea as shown by cases under treatment; laboratory studies of immunity in syphilis; a study of transferability of the disease in its various stages to rabbits, and clinical studies of the effects of non-specific treatment on syphilis. Immunological problems in connection with gonorrhea have received attention. Of outstanding interest was the organization during the year of the "Committee on Research in Syphilis, Inc." by a group of philanthropists. The Public Health Service is coöperating with this committee in the development of a coördinated attack on the problems of syphilis.

Cordial coöperation has been continued with the state health authorities, to whom there were reported during the year 176,502 cases of syphilis and 143,490 cases of gonorrhea. In the clinics under the supervision of the various state health agencies, 109,274 new patients were admitted and received 2,147,516 treatments.

It has seemed important to intensify efforts for the control of the venereal diseases among beneficiaries of the Public Health Service. During 1927 there were admitted to Service hospitals 6,151 cases of venereal diseases, representing 18.71 per cent of the total admissions. These cases were hospitalized for a total of 216,559 days of treatment at a cost of $812,096.25. Active measures have been undertaken to instruct the beneficiaries of the Service in prevention of these diseases by means of lectures, films, and posters. The Coast Guard and the various shipping companies are coöperating in this effort.

The Superiority of Whole Wheat Bread

J. F. Lyman (*American Medicine*, Nov., 1928). claiming the superiority of whole wheat bread over white bread, presents a number of tables showing relative food values, digestibility, etc. He concludes: Whole wheat flour is more nutritious than patent flour, because, when used as part of a mixed diet over long periods, it: 1, is favorable in its action on the elimination of intestinal work; 2, promotes the utilization of protein; 3, maintains a healthy condition and produces larger adult animals; 4, makes possible larger litters of young, which grow more rapidly and more of which reach the weaning age.

WOMAN'S AUXILIARY

Annual Meeting, Woman's Auxiliary to the West Virginia State Medical Association, Martinsburg, W. Va., May 21-23, 1929

TENTATIVE PROGRAM

Monday Evening, May 20th

Registration—Shenandoah Hotel.

Executive Board Meeting.

General sessions held in Sunday school room of the Lutheran Church.

Mrs. J. P. Lilly, of Morgantown, the new president of the Woman's Auxiliary, who will take office at the Martinsburg meeting.

Tuesday Morning—9:30

Invocation—Rev. E. K. Ray, pastor, Methodist Episcopal Church, South, Martinsburg, W. Va.

Address of Welcome—Mrs. G. J. E. Sponseller, Martinsburg, W. Va.

Response—Mrs. V. T. Churchman, Jr., Charleston, W. Va.

Roll Call.

Minutes of Last Meeting.

Report of Treasurer.

Report of Committees: Organization, Educational, *Hygeia*, Parliamentarian.

Report of Delegates.

Report of Secretary.

Report of President.

Tuesday Afternoon—2:00

Round Table—Mrs. J. S. Klumpp, Huntington, W. Va.

Address—Dr. Harry M. Hall, Wheeling, W. Va., president, West Virginia State Medical Association.

Tuesday Evening—8:00

PRESIDENT'S NIGHT

Address, "The Auxiliary"—Mrs. R. V. Shanklin, Gary, W. Va., president, Woman's Auxiliary to the West Virginia State Medical Association.

Address, "Jane Crawford"—Mrs. A. H. Hoge, Bluefield, W. Va.

Wednesday Morning—9:30

Business Session.

Election of Officers.

Address.

Installation of Officers.

Adjournment.

Wednesday Afternoon—2:00

Executive Board Meeting.

Harrison County

Newly elected officers of the Woman's Auxiliary to the Harrison County Medical Society, who will serve during the current year, have recently been named. Mrs. D. P. Cruikshank, of Lumberport, is the new president; Mrs. C. C. Jarvis, of Clarksburg, vice-president; Mrs. R. V. Lynch, of Meadowbrook, treasurer, and Mrs. B. S. Brake, of Clarksburg, secretary.

The various committee chairmen are as follows: Mrs. R. L. Osburn, of Clarksburg, program committee; Mrs. J. E. Corbin, Clarksburg, membership committee; Mrs. C. C. Coffindaffer, Clarksburg, social committee; and Mrs. A. T. Post, Clarksburg, *Hygeia* committee.

Executive Board Meeting

Mrs. J. Preston Lilly, president of the Auxiliary, has urged that all county auxiliary presidents be present at the meeting of the state executive board which will be held at Martinsburg in connection with the state convention. Mrs. Lilly expects to put on a program of expansion during 1929-1930 and desires the assistance and coöperation of all the county auxiliary heads. Plans for the coming year will be made at the board meeting and a number of other important business matters will be taken up.

The West Virginia Medical Journal

Directed and Edited by the Committee on Publication

[The Committee on Publication is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible]

JAMES R. BLOSS, *Editor-in-Chief* - - - - - - - - Huntington

ASSOCIATE EDITORS:

WALTER E. VEST, Huntington — HARRY M. HALL, Wheeling — J. HOWARD ANDERSON, Marytown — C. A. RAY, Charleston

MR. JOE W. SAVAGE, *Secretary-Business Manager*, Charleston

Entered as Second Class Matter, January 1, 1926, at the Postoffice at Charleston, West Virginia

Vol. XXV — JUNE, 1929 — No. 6

PRESIDENT'S ANNUAL ADDRESS *

By HARRY M. HALL, M.D., F.A.C.P.

President, West Virginia State Medical Association

Wheeling, W. Va.

Today, the here and now, is fast moving, ever changeful, inclined to be mechanical and scientific and little given to the calm reflection that characterizes that of our forefathers. So rapidly do we seem to progress that the lengthy philosophizing over a given subject may develop that as the conclusion is reached the object of analysis is no more, succeeded by something else far different. Doubtless the vast fundamentals remain the same, but as the devotees of this hour and day do not feel it is necessary to worry too much about the basic matters, but are more concerned about what strikes their sensory apparatus with the biggest bang, the superficial and "whizzy" is for the most part what is deemed important. Into this scene, as president of a state medical society, one is expected to throw the profession of healing and to observe briefly what part it seems to play or has played or will play. Speed has had its effect upon us—no doubt about that! The results, as might be expected, are both good and bad.

There is an intense desire for diagnosis that has well nigh become an obsession. So therapeutic tryouts are little indulged in. Even the Wasserman is too slow and irks us; we must have the dark field, and if the syphilitically suspected yields neither he is provoked into giving one of the two. The laboratory is constantly besieged for quickened results, so that if two or three days elapse consultant after consultant is called in the hope that some one will make a decision. What is the matter with the patient must be determined at once. The speedy decision has reached the point of ultra refinement and few of us have stopped to think how greatly changed this important procedure has become. Truly, the medical profession has kept up with the spirit of the age in this.

In obstetrics, speed is again a fetish—not always with quite so good results. In this the doctor has bowed to the wish of his customer. It was to be expected that the woman who can scarcely keep up with her schedules of beauty doctors, dressmakers, milliners, bridge engagements and civic duties should not care to come to her accoucher and expect to find him tedious and tolerate it if he is. She does not, and if he is too long about it and there happens to be a next time (which very often, of course, there is not), he must take a substitution as inevitable. And since the modern obstetrician is supposed to have entirely forgotten any rubbish about "Eve's curse," woe betide him if pain creeps in like a bat and circles about the delivery room. Pain is regarded as obsolete in the matter of birth—as obsolete as a horse and buggy.

If you think medical knowledge is not well disseminated, try to combat, for perhaps some good

* Presented before the West Virginia State Medical Association at Martinsburg on the morning of May 21, 1929.

reason, this desire for no pain and a quick delivery. No delays are tolerated. Césarean section will be immediately brought forward by the patient or family themselves. Yet the whole drama of delivery is still designed for patient and somewhat slow progression. And for this excessive speed phenomena we are still somewhat mortified to find we have an uncomfortable infant mortality, despite our exquisite technique and our marvelous improvements in hospitals and armamentarium.

In drugs we demand a quick and definite effect. Pharmacological action must be apparent in a swift demonstration. So we jump to massive dosage in digitalis. The mouth is too slow for many, subcutaneously almost as much decried, and intravenously is not as responsive as we wish. This may be all right if we are sure of our diagnosis and of the reaction to a given drug on our patient's part. As these can not always be correctly obtained, our desire for speed may cost us a life.

It must be admitted, in the realms of surgery, that the more noted operators have overcome the mania for speed, and your better surgeon is quite resistant to the call for speed in his demonstrations. He has passed through the fire and has learned this lesson.

Many phases of medicine require calm reflection and slow analysis of the higher type. Incipient tuberculosis, metabolic diseases, the psychoses, and many more must not be hurried even in a restless age of interrogation. Each one of us, when tempted by a little brief authority to hastily assume the mantle of the "short cut," should recall each wound, stabs with pain the whole body, each scar disfigures the complexion's ruddy glow of health.

The profession of medicine today has no better friend nor more dangerous foe than speed. Like the other great elements of matter, light, heat, cold, anesthesia, sedatives, and the knife, which are ours so largely to judiciously employ, nothing is more potential than speed. More pregnant with success or its twin brother, defeat. So many of the patients that come to us now are the victims of hurry and speed—to get rich; to become powerful; to be famous; to get experience, to fulfill desire, that we should, with profit, pause (if only for a moment) and remember that what brought them to us should make us regard speed as one of the forces to reckon with, both in connection with our patients and ourselves. For do you not recall that grimly standing at the top of that dread column of cardiovascular diseases, as the most inviting victims of all, are we ourselves?

Let us digress for a few moments on what are some of the problems that help to worry West Virginia medical men. As a matter of fact, they are not so many. The body of men of which you today are representative are in rather a flourishing condition—this in face of a decided slump in the state's chief industry, coal mining. Many of you depended on it directly; a great number indirectly. The lesson had to come sooner or later to carry straight to our minds that it is a bad economic situation for any town, any city, any state or any country to have but one industry on which it depends. Nothing could better illustrate this than Charleston, West Virginia, abiding place of so many good members, brought flat on its back by the downfall of bituminous supremacy. Phœnix-like, they arose from the black of ashes to build out in other directions until they are, in ever so brief a period, one of the great chemical centers of the world—and they are not depending on this entirely. Elkins, from being one of the busiest coal centers in America, looks about for a substitute for its coal-mining withdrawal. It will find it, too. In the meantime, a fine highway cutting across it will soon make it one of the scenic beauty spots of the east, to which the President might have come for his summer home.

We mention these two instances to show how dependent our profession is upon economic conditions and successful industry as they, in times of prosperity, are absolutely dependent upon us. We, many years ago, walked across the stage of life like some *Hamlet*, aloof from the shopkeeper, business and industry. We have become inseparably linked up with them now. As they succeed, so do we; as they fail, so must we reduce our standards. But there is a limit, and any community must recall this fact—that to have a good doctor it must be a successful one or he can not stay. He will never leave them in a time of need, but sooner or later he will, because the day of privation for a man who has long sacrificed his life in education and training is past. Economically, too, he must look out for himself. Too long he bore the stings of outrageous fortune. He has his standards and must keep them. If a community is too small to have a good doctor, then let them quickly build a good road to lead them to where one resides.

We think we voice a common sentiment when we tell those medical men of this state, who tenaciously hung on and carried the banners of their

calling in proud array against the complete collapse of this great coal industry 'round about them, never wavered—smiled, in fact—and then helped to build up diversified industries in its place, that we are very proud of them and that no crusaders of old or their caparisoned steeds ever rejoiced over a more courageous conquest. Without lamentations of discontent they kept right on serving their communities, perfecting their local societies, so that illustrious men from everywhere attended them, and, for the most part, bore the countenances of men with whom all things were well.

It must be a source of pride for all of you to glance over the activities of the several component medical societies that go to make up this body. A mere perusal of the JOURNAL shows men from everywhere gladly attended them. What was wont to be an event is now a common occurrence. We find Mercer meeting with McDowell and inviting Virginia to be their guests, to share in hearing illustrious men. That admirable organization, the Tri-State, though not strictly local, has programs that look like the day's provision of a great national organization. The Eastern Panhandle has almost a full attendance when it meets. Because of these pretentious county programs your program committee has seen fit to adopt an idea which we think is somewhat original, but which we believe will sooner or later be generally adopted, and that is to contract the state program so there will not be an overstrain on the consistent listener. There are men who argue that these long, full-day schedules (which run into the night) are fully attended. They may be, but not by the same men. It is simply beyond the powers of concentration and reception of the average brain. Long study-hours in schools are being overhauled for the same reason. So it is rather practically argued that it is better to have fewer men, to whom all the conscientious listeners can fully focus their powers of absorption, than a lot to whom it is impossible to be loyal. The contracted program also allows for attendance at other things, such as, for instance, the exhibits, without a good man having the guilty feeling that he is playing "hooky." By having the sections, any predilection may be satisfied. It is a departure, and, so far as we know, the idea was originated in this state and we are all very much interested in its outcome. This departure also allows for personal commingling and conversation, which are held by some to be the more precious accomplishments of just such a gathering as this. To walk up to noted men, who are nearly always approachable, and ask them to explain in detail some of their more noted achievements, is a brief post-graduate course in itself. We noticed this at Boston recently. Then we can learn to know each other, something that is not as well accomplished as we sometimes think. If we all know each other ere we leave, would not that be an accomplishment? We would handle any legislature with ease after that.

PRESIDENT, HARRY M. HALL

That brings us up to the legislature and its recent session. We have no reason for regrets. Two of our members were outstanding in ideal administration of highly successful political methods. The actions of our legislative representatives were somewhat novel. Finding that information and science were rated with a certain careless disregard, they employed straight political methods with good success.

We do not care to spend much time on it, but it is nevertheless once more urgently requested that we make it a point to either send doctors or people who are generally known to be highly sympathetic with our ideals to the legislature. Only in this way will we protect our research laboratories, our medical schools and our hospitals, to say nothing of ourselves. There should be some sort of medical com-

mission to which the legislature could appeal for an explanation of what its medical bills mean. This, properly, should be the State Health Commission. It is inconceivable that so important a matter as health—or, let us say, life and death—should come at any time to so cruel a situation where it could be ignorantly abridged or denied by some one who, by their all too frequent confessions, know nothing about what they are voting upon.

We, with our sister states, should reach up into the capitol at Washington. Some may take the opportunity to refer to the silly notions of a group of members of our state legislatures. They are no more inconsistent than those coming from congressmen. We West Virginians have helped to change this somewhat by putting in one of our own members as senator. Just what he is able to accomplish will be closely followed with great interest. We should all pause in our absorbing duties to give a little thought to politics, just as we are admonished to pause for prayer. For politics is only a kind of prayer put into effect. We desire a member of the cabinet. Health is one of the essential cornerstones of a nation. Many dynasties have fallen at the time of their commercial glory from malaria or some other disease. So why not a member in the cabinet to advise how best to avoid the decline and fall that has so often in the past laid countries as militant as ours down in the dust?

It is generally conceded that the idle hands with nothing much to do will next try state medicine. No attempt will be made to discourse on it here. If we are as united as we should be and have effective legislative representatives, "they shall not pass."

Viewing as a whole every medical association we have ever seen or been a member of, we regret to say that evidences of dissention have been apparent. Part of it is the healthy sign of growth without which nothing will progress. Part of it is acrimonious and beneath men who are in the art we are. By the requirements of our training and education and our familiarity with human frailty we are of necessity a canny aggregation. In any kind of effort requiring concentration or solidarity, one canny fellow equals ten or more who fight by brawn alone. If we expect to win any kind of an engagement with ignorance or prejudice, we had best get rid of our differences. The better sort should be allowed to go on; the other kind should be strangled ere they breathe. Good men should be ever ready to step into a breach wherever it develops.

We note that, as time goes on, we are all becoming affiliated with a number of medical associations. Medicine has become so varied that we naturally pick out what is best adapted to our needs. Sometimes we harbor a fear they will multiply until we have the same battle in our ranks that has ever engaged so many of our citizens in trying to make up their mind whether to show more allegiance to the state or federal government. A house divided can not stand. This idea extends down to hospital staff meetings, which, if one happens to belong to the staffs of several hospitals, may seriously interfere with the actual attendance at county society requirements. Some nights must be free. We should well remember, however, that nothing would suit the nostrum makers, the irregulars, the anti-vaccinationists, the auto-vivisectionists, and all the other hosts without the pale, more than that we should grow lukewarm toward our county, state, and American Medical associations. Their organizations may not be perfect; may lack the air of special dignity that clothes some of the more august and aloof organizations; may seem to some to be a sort of proletariat. But if they ever grow weak or fall, you may be sure all is lost, and the others will not be long in following.

In some manner or other, the science of medicine must undergo some simplification. It would seem we are erecting a house with too many rooms. A vast edifice that betrays our complex researches and leadership among the sciences, but which is quite difficult to rest in over night without a feeling that the very splendor and magnificence is too overwhelming for a certain peace of mind and calm reflection. We see some plutocrat erect a palatial residence of some hundred rooms and then find he has boarded it up to a great extent and gone on some long journey accompanied by his wife and left it with some hired keepers.

We have gone on piling up statistics, accumulating a stupendous literature, expending nameless sums on highly complex research systems, delight in making the procedure of today deny the technique of yesterday, multiplied our professional meetings until we have little time for other cultural matters: and finally carried the news that our various decisions are so difficult to arrive at by any but the most elaborate laboratory tests, instruments of precision methods, and generally intricate programs, that one sighs in vain for the vital, strong arm, highly proficient simple men of the past who, whatever they did, still depended on an individual touch and a courageous mind to bring what has proven to

be very successful results. We shall never forget what we have learned from Dr. Deaver and Dr. Reisman, who, it seems to us, are two examples of what we mean.

It is somewhat hazardous to argue in one paragraph for simplicity and bring up in the next such an intricate matter as the study of the mind. Nevertheless, as time goes on it, too, will be simplified. Perhaps the many deep and darkened avenues of psychiatry are what keep so many good men away from it now. Still, it must be met. Our next great adventure is with the so-called psychoses. Here in West Virginia we have not kept pace with its requirements, and only a very few of our membership have ever thought it worth while to embark in its specialization. There are many men in our ranks highly fitted by temperament and judicial qualities to be psychiatrists of the first quality. Would that they would take it up, because, if they do not, men from other states will step in and accept the invitation its study warrants. Everywhere one goes now much that afflicts mankind is laid to the amnia-adversions of the mind. It would be a glorious triumph for us to energetically enter the study of its inferiorities and complexes. When we do we will have settled part of the perplexities of religion, much of what is behind crime, and removed the last standard from those religious bodies who claim to cure by mind alone.

Something very energetically and quickly conceived should be done in regard to a four-year medical course at the state university. We are quite aware there are men who oppose this. Personally we can see no object gained in the carrying on of any project half way, whatever it happens to be. In the case of any system of education, it is particularly to be criticized, for it marks any such university that gives it still in the formative stage. We are all quite aware of what is going on in the colleges that give complete courses in medicine; they are having their hands full in taking care of their own. So the day will certainly arrive when these two-year men will have some difficulty in finding a place to finish. We can not see how they go through their two years with any full sense of security. We have often been at a loss to understand how they come to matriculate with such uncertainty before them, at all. We believe we should come to a decision on this matter. Either do away with the two years, confessing in the movement that we are not made of the sterner stuff, or else be patriotic West Virginians with complete confidence in our ability to make a satisfactory four-year medical course, and then with energy and determination quickly bring it about.

Contract practice has its two sides, as has most everything else. In isolated sections, where a single medical man could scarcely be expected to live according to the present required standards, without an assurance of an adequate compensation, and where the calling of doctors to respond in the usual manner is clearly out of the question, some guarantee or contract is probably necessary. On the other hand, when extended to cities and towns where a large number of medical men are assembled, it is a questionable venture, and, while it may temporarily prove very profitable to one or two, it is scarcely the equitable thing to do as regards the ethical treatment of one's colleagues. The system could easily be translated over into state medicine. We are well aware that some of the best men in the state have exhibited brilliant and highly constructive work as contract surgeons. What we have said is in no sense critical of any of this, but the whole subject is becoming somewhat involved and, sooner or later, it will have to be carefully analyzed and classified with all the courage available. A commission of energetic men, composed not only of those in general work but also contract men, should be appointed; and they, after giving their best efforts, should instruct us as to the just lines of demarcation; the situations where it should obtain and those where it should not; and the possible corrective laws which would make the whole service clear. Unless something of this sort is attempted, honestly and fearlessly, much conflict will in time arise. We know this is a delicate and controversial subject. All the more reason it should be tackled and settled by representative men of unimpeachable reputations from both sides in a manner satisfactory to both.

Research laboratories are the great need of the state. Thoracotomy has been carried to careful conclusions in one part; calcium in tuberculosis in another. Measles has been studied elsewhere. Men in isolated sections have developed such a practical system of careful technique that a baby can be almost as safely born in the home as in the hospital —at least so their statistics show. Many new innovations started elsewhere have had proficient followers here, as in the cause of sacral anesthesia, which has, in the hands of some men, achieved brilliant results.

The question of our free services will not down.

We were trying to abstract some information from the farm relief bills the other day, and suddenly it came over us, with a good deal of mirth, that we also were entitled to some medical relief, too. It sounded sort of absurd at first to even give it a thought. But, by and by, it came to be quite tenable. For no particularly good reasons, except two, did we ever have any foundation to donate our services. The first was the pathetic and humanitarian appeal of a human being, without money, ill. Had other agencies been equally as thoughtful, the chances are he would never have reached the state of being ill. Without question, medical men have always responded to this appeal, and so have the hospitals which are their creation. The second is in return for special privileges a doctor possesses, which, in some thirty years, we have never discovered. Giving so freely always, it was soon taken for granted, and now today we find the system abused and, what is far worse, we receive no credit for our philanthropy except in certain dripping notices now and then which sound like some of the awful *Mammy* songs and are frequently insincere. We do not say we have not been appreciated; that would be unfair. We are talking economically now.

We should like governmental medical relief, but not like either the raisers of the tariff nor the seekers for farm relief. We merely want ours indirect. President Hoover, very fortunately, has our sort of relief in mind, for he has said so. He wants to abolish poverty. We have watched a good many hundreds of people seek medical relief because they have had no money, so they said. We happened to be in a free clinic where we could. Barring a few of the very old and the very wretched, we do not believe scarcely any of them—even the so-called hobo or vagrant—wanted to get it in reality for nothing. At this dispensary it has been our custom to accept what they could pay, and whenever they could manage it at all they paid. Sometimes it partly paid for their bed, but very little of its cost; yet it helped retain their self-respect, and perhaps we get well better, retaining our self-respect.

We were slow, all of us, in meeting the problem of the middle class. Long ago this was written of, not in a medical or hospital journal but in the *American Magazine*. The magazines have harped on it often, and now certain elements of the laity threaten to take it out of our hands altogether. Certain hospitals have solved this by arranging corridors with small rooms presided over by a single nurse, the whole making a unit.

This is one of the most acute problems before the medical and hospital organizations, and unless settled by us at once, it will be tried by some one else. However, medical relief, or a good job provided for every one, is what we will have to write to our senators to arrange. Oftentimes good measures intended for medical relief are promulgated by Congress. Praiseworthy in many respects, they usually do not carry the idea of supervision by the Public Health Service, so can easily be made pernicious, and are therefore opposed. Lay organizations, particularly the women members, are slow to understand this.

With no suggestion, we hope, of being sacriligious or even blasphemous, we are moved to say that we seem to all be in need of some coming of a great, ennobling personage after the fashion of Harvey, Koch, Lister, or Pasteur. Medicine is in need of an epochal happening. It will, indeed, be hard of accomplishment, and the man to do it must have many of the qualities of our national hero, Lindbergh. Yet we believe we are all hoping for some unnamed medical man to fly out into the uncharted blackness and emerge again with an awe-inspiring discovery.

We have not forgotten diphtheria antitoxin, x-ray, radium, nitrous oxide, transfusion, focal infection, malarial transmission, hormones, endocrines, vitamines, insulin, proteid reaction, glorification of diet and rest, salvarsan, brain surgery, or abdominal surgical technique. Every one of these is magnificent in its gesture. They make the Great Adventure hard to picture, difficult to imagine; render it almost but not quite impossible. The Great Adventure always had that incomprehensible way to the rank and file. We are so accustomed to new discoveries along the above lines that we are like prophets who have long served in the temple and three wise men and a newborn babe mean nothing to us. Daily shoving the pawns of life and death across the table with our old friend, "The Future," has given us the false front of inveterate gamesters, quite calloused to the calls of the weary, and commercialized to the point of hearing not the beggar at the gate. Forgive us if we but say ours is the kindest of the kindly ears. Within our stolid fronts beats ever an aching heart which best discovers the arrhythmic discordance of all others. Ours the eyes that see beyond the normal gaze as does the tremendous power of the lights we use. Deep within our perhaps too-knowing souls is always the little lamp that burns in high expectancy for the bridegroom if he comes. We have talked to many, and,

despite their professional cynicism, made necessary by the exigencies of the occasion, every doctor worthy of the name hopes to see one of his brethren or himself see the beating wings of triumph announce that all that is necessary is known about cancer; the pyogenic cocci doomed to extinction, the chemistry of the blood understood, or a living cell created. Could we but in the next breath give voice to any of these, how think you you would act?

We are too uniformly efficient, too glossy, too highly standardized to good work. We need a baptismal fire of scientific sensation to give a new life to our sincere endeavors; something to quicken the blood and fire the imagination to a new flight of medical achievement. The laity say we need it. That is what they expect of us. We have grown too opulent and routine. So we that sit and wait scan the horizon for the daring warrior against disease, all the while going over and over the tragic, saddened words of Madame Butterfly: "Some day, he'll come."

Since we are in the flowery fields of speculation as to our calling, we shall indulge in but a little more. We shall grow confidential—scarce seemly for one calling himself an executive. We have always been a sort of "Joan of Arc" about the profession to which we belong. We have sat in idle places, and, out of the sunlight, revelations have seemed to come as did they to that girl now so solemnly canonized in her noble posthumous glory. Back as a boy we always had the strange feeling the medical profession would some day rule the world, not after the manner of kings or emperors, not as presidents, not yet as dictators, but rather indirectly as the masters of the science of life, unlocking a myriad of priceless boons that corrected directly and uncompromisingly in rich and poor alike, white and black without distinction, and believer and unbeliever with no thought of the morrow, all or nearly all the festering sores that had, in brain and body, beset their civilized or even non-civilized existence. It is pretentious. But out of the pages of *Alice in Wonderland* often come the verities that rule existence, even to the science of medicine. We have never, even until this day, lost our enthusiasm for a body of medical men gathered together. We have listened to men in the laity say they would rather address any body of men before a medical gathering—they seem so difficult to reach, so bored with anything save the gross, material facts of flesh and its riotous departure from the normal. We think they are unconditionally wrong. No one knows, better than we, what petty, small and mean infractions find access and a dwelling place behind our noble brows. The frailties beyond the confines of mere words to utter that adulterate our finest and most gracious moves. The refusals to accept the better way that drag us sometimes on ignoble paths. The lust for fame and power we share in common with our fellowmen. The absence of correct design and fairness unalloyed that, despite our will to do the dictates of a kindly soul, will rise like flotsam to the top. All these we know, and more—and yet we waive them all aside, since, in the scales, a worthier lot weights down the other pan to where it will move no more. We believe our youthful fancies, after all, were right. It is not vanity to say that all the other forces in life show signs of much decay, and in medicine we see the slowly moving fingers reaching out for better things. We can see that what has lasted in the work of foreign missionaries is their medical, hospital, and hygienic achievements. We can see that what the doctor has learned about the mind lessening crime. We can see the laboratory lessening, to the point of extinction, most all disease. We can see a healthier world, a more pleasant world, and less need for warfare. We can visualize medical men consulted before anything of a pretentious nature is undertaken. We can see poverty almost banished by social medicine, and a better feeling prevailing. Life is made a happy experience and, finally, death a time to go, shorn of much of its agony. We can see doctors consulted on much aside from the questions of disease, because they know so much of human passions and incentives. Yes, visionary as it sounds, the medical men may rule the world. Seasoned with defeat and death, they wisely know the value of the victorious and the living. "Some day, he will come," and "Some day, it will come." Out of the darkened sky will come a new master with a magnificent medical message and place his gift beside the *Spirit of St. Louis*, and for the moment, at least, the aëroplane will be forgotten.

Age Determines Exercise

Amounts of physical activity required daily by healthy persons at different ages, as computed by various authorities, are summarized in an article on exercise in *Hygeia* by Dr. James O. Nall as follows: At 5 years, four hours; 7 to 9 years, five hours: 9 to 11 years, six hours; 11 to 13 years, five hours; 13 to 16 years, four hours; 16 to 18 years, three hours; 18 to 20 years, two hours; over 20, one hour.

THE NEWBORN INFANT *

By RALPH M. TYSON, M.D.
Philadelphia, Pa.

The newborn period of infancy has been variously spaced by different physicians. Some contend that by the time the cord has separated the child is entering upon infancy proper. The cord may separate in three to fifteen days, and the child be normal. In the series of cases here reported the average day for the cord to drop was 7.8 days. Some feel that by the time the child has regained its birthweight, usually during the second week, the newborn period is ended. These two factors are so variable in length that others think some arbitrary time should be set. Hence we have the neonatal period, comprising the first month of postnatal life. Studies presented in this paper cover only the lying-in period; that is, during the patients' stay in the maternity nurseries, which is for the two weeks' time following birth.

The newborn period is the border line between the obstetrician and the pediatrician. It is often debated whether the treatment and management of the newborn belongs to the former or to the latter. It can not be denied that the care of the newborn often falls on the medical attendant who delivers the baby. The general practitioner needs to be as skilled in understanding the newborn infant as he does the mechanics of its entrance into the world. It is becoming the custom for obstetricians in large medical centers to place a pediatrician in charge of the maternity nursery—and surely the newborn infant is entitled to as much special care as the mother.

The cases found in the nurseries affords abundant clinical material for teaching the senior medical student and interne some of the problems that arise during the newborn period, and which he must face if he enters the general practice of medicine.

Prenatal Influences.—Prenatal influences belong primarily to the obstetrician, but an understanding of them will help the pediatrician and general practitioner in the proper management of the child. The influence of heredity will not be discussed in this paper.

Obstetricians differ in their belief as to whether a limitation of the diet of the pregnant mother will limit the growth and size of the fœtus. It is no uncommon event to have a mother who has been forced to a scanty diet because of a toxemia, give birth to a big baby weighing well over the average birth weight of seven pounds. Also the big woman with a big appetite frequently gives birth to a small baby.

A comparison of a group of babies cared for in one of the private nurseries of Jefferson Medical College Hospital with another group in a ward nursery at the Philadelphia Lying-In Hospital shows a difference of a half pound in the average birth weight. Evidently the better economic status of the private patient has had some influence in determining the size of the newborn infant.

Deficiencies in the pregnant mother's diet will have some influence on the child. The buds of teeth are laid down early in pregnancy and defective primary teeth are generally conceded to be due to improper diet of the pregnant mother. Even the dental buds for the second teeth are laid down during pregnancy. The foundation element of the tooth is calcium. The mother must either have this element in her food or rob her own baby. The grinding surface of the teeth is formed before the child is born. Teeth grow from the grinding surface down and the root growth lifts the tooth out. A diet deficient in calcium will materially affect the tooth development of the fœtus. Milk is a good source of calcium.

Diets of pregnant mothers deficient in vitamins may have some influence on the growing fœtus. It has been shown by Moore[1] that when a diet deficient in vitamins B and C is fed to rats one of three conditions results:

1. Abortions or absorption of the embryo;
2. Death of the young at birth, usually characterized by hemorrhages; or
3. Early death during the nursing period.

He reports a case of hemorrhage in a newborn child whose mother, all during pregnancy, ate white rice, rolled oats, potatoes, and white bread. The infant died of beri-beri and extraperitoneal hemorrhage. In the cases of hemorrhagic disease of the newborn that have come under my notice, I have not been able to trace any deficiency in the mother's diet. Dutcher, of Pennsylvania State College, has shown that the cow synthesizes vitamin B in her stomach by action of a specific bacterium. The human gastrointestinal tract may do likewise. However, it goes without much argument that the pregnant mother

---

* Read before the Tri-County Medical Society, Morgantown, W. Va., February 28, 1929.

From the Department of Obstetrics and Pediatrics, Jefferson Medical College, Philadelphia, Pa.

should have an adequate and balanced diet. The nutrition of a baby before it is born is quite as important as after it is born.

Ratner[2] has traced out some interesting cases of hypersensitiveness to certain foods in infants which he believes to have been caused by the diet of the mother. In one case a pregnant mother seemed able to tolerate only eggs. She would eat six or eight eggs daily. As soon as eggs were added to her baby's diet when it was seven months old a severe eczema developed.

Ratner has shown by experiments on guinea-pigs, whose placental structures are similar to those of the human, that mothers can be sensitized to horse serum, and that they transfer a passive hypersensitiveness to their offspring which persists for a period of three months. He also showed that non-sensitive mothers, injected with horse serum a few days before parturition, gave birth to litters non-sensitive at birth but who, one month later, developed hypersensitiveness.

Prenatal infection of the infant across the placental membranes does occur. Usually the placenta acts as a strong barrier against destructive agents from the maternal blood. Maternal infection bears an important influence on fœtal viability and mortality. The transmission of a general infection takes place through the maternal blood vessels to the circulation of the fœtus through apparently unruptured vascular channels. Practically all known specific diseases, such as typhoid, scarlet fever, syphilis, malaria, anthrax, and both lobar and broncho-pneumonia, have been transmitted. We have a case of broncho-pneumonia in a stillborn infant at Jefferson Hospital. This will be reported in detail later. Dodge[3] has given an excellent survey of the literature on antenatal infection.

It is well known that toxemia of pregnancy has caused the death of many infants before or shortly after birth, and has caused morbid changes in the infant, affecting its entire life. The mother with chronic nephritis frequently gives birth to a puny and delicate infant. Methylene blue, injected into the mother just before or during labor, will pass across the placental membranes into the baby. The newborn infant will eliminate it in the urine during the first day of life. It is generally conceded that syphilis in the newborn is a congenital disease, not hereditary, and that the infection passes across the placenta from the mother.

The prenatal influence of maternal impressions is a debatable question. The direct marking of a child in utero by some catastrophe experienced by the mother is very doubtful. The indirect influence through the ductless glands is another question.

Years ago, Paracelsus observed the relation between goitered mothers and cretinous children. The classical Romans warned their gravid women away from the amphitheatres. Just as they noted the connection between drinking-water and cretinism, so they observed that pregnant women, when subjected to shocks and frights, were likely to bear deformed children. Modern endocrinology maintains that any severe shock or emotional upheaval may cause a gland disorganization in a gestant woman sufficient to explain any grotesque birth.

It is a common observation that the female goes through numerous glandular and chemical upheavals, at puberty, at the menopause, during each menstrual period, and particularly during pregnancy. More important, still, is the discovery that strains, thrills, unsuited employment, grief, worry, unhappiness, constant nervous tension, and other emotional stresses are likely to bring about disbalances of their endocrine glands, and that these troubles persist and affect the health and mentality of subsequent children. It has been observed at the Post-Graduate Hospital in New York City that the birth of deficient children has in most cases been attended by emotional upheavals in the mothers during pregnancy.

Infant Mortality.—The study and prevention of infant mortality has commanded the attention of philanthropic individuals and health authorities for some time, but its greatest popular impetus has come since the opening of the twentieth century. The infant mortality rate has come to be regarded as the most sensitive index we have of social and sanitary progress.

There are some who believe that a reduction of infant mortality is not an unmixed benefit to society, but tends to obstruct nature in her struggle for existence by perpetuating the "weaklings" and the "unfit." Poponoe and Johnson put it coldly when they say that "part of the children born in any district in a given year are doomed by heredity to an early death; and if they die in one year, they will not be alive to die in succeeding years."

Sir Arthur Newsholme has shown that "a high infant death-rate in a given community implies in general a high death-rate in the next four years of life; while low death-rates at both age periods are similarly associated."

The reduction in the mortalities of infancy thus

far effected has taken place largely in the latter half of the first year of life. Very little, if any, progress has been made in limiting deaths in the neonatal period. Upward of 40% of the deaths during the first year of life occur in the first month and particularly during the first few days.

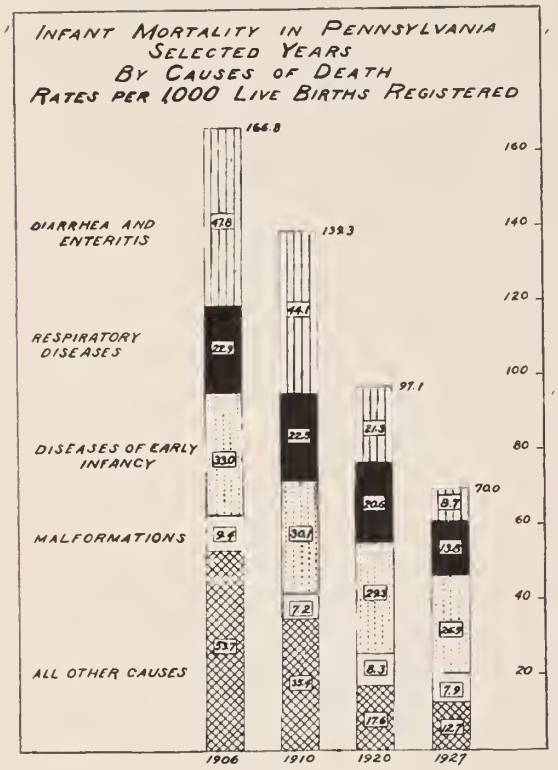


CHART I.

With respect to infant mortality, the experience of New Zealand, the most progressive country in the world from a sanitary viewpoint, is interesting. The infant mortality in 1906 was already lower than it was in Pennsylvania in 1927, and in 1926 only 40 deaths occurred in New Zealand out of every 1,000 babies born alive. In 1923, the latest year for which detailed figures for their mortality are available, their rate was 43.8. The rates for groups of causes were: Gastrointestinal diseases 2.8, respiratory diseases 4.1, diseases of early infancy 24.5, malformations 5.6, all other causes 6.8. It will be noted that the rates for diseases of early infancy and for malformations are almost as great as in Pennsylvania, but that, with the virtual elimination of many other causes of infant deaths, these congenital causes constitute 71% of the total. Their rates from congenital causes were no greater in 1875, when the general infant death rate was 126, than it was in 1923, when the general death rate was 43.

The record of infant mortality at the Philadelphia Lying-In Hospital covers the period from March, 1925, to September, 1927. It is high as compared with the general rate of the state, but no attempts have been made to gloss over the record, and each case is carefully reviewed before the entire staff.

The other aspect of the problem—the damage rate among the survivors—should be carefully considered. There is not much question that a high infant mortality goes apace with a high damage rate among those who survive. Infant mortality is not only a reflection upon the past, but also a prophecy of the childhood of tomorrow. The initial casualties of war are long forgotten, or have become enshrined memories, while we are still caring for our damaged soldiers.

Stillbirths.—According to Table I, it is noted that of the 1,716 deliveries in a 2½-year period, 85, or 4.9%, resulted in stillbirths. Forty-four were males and thirty-two females. The sex in nine cases was not stated. The ratio between the males and females is as 137 is to 100, and is similar to the ratio of deaths of males to females in such conditions as diarrhea and convulsions in infancy. Just why there are more deaths among males than among females is difficult to understand. According to the United States Census Bureau, this ratio of deaths between males and females has been gradually increasing during the last twenty years.

TABLE I.

Total deliveries	1,716
Stillbirths (4.9%)	85
Males	44
Females	32
Premature	46
Full-term	35
Overterm	4
Syphilis	30
Emergencies	29
Autopsies	15
Spontaneous deliveries	48
Forceps	6
Versions	11
Sections	3
Breech extraction	10
Primipara	41
Multipara	42

Forty-six, or 54%, of the stillbirths were premature babies; 35 full-term babies, and four overterm, according to the history given. Twenty-nine cases were delivered in emergencies, most of whom had not been in the antenatal clinic. Fifteen autopsies were performed.

There were forty-eight spontaneous deliveries, 6 forceps, 11 versions, 3 sections, and 10 breech extractions. Forty-one patients were primiparas, and

forty-two were multiparas. In two of the cases no statement was made of the para.

It is only fair to make a further division in the study of these cases into those in which death occurred in utero and those occurring during delivery.

TABLE II.

Deaths in utero	43
Premature	28
Causes:	
Syphilis	17
Premature	10
Long labor	2
Hydrocephalus	2
Polyhydramnious	1
Separation of placenta	4
Toxemia	3
Unknown	4

There were 43 deaths occurring in utero in which a diagnosis of probable death was made prior to delivery. Twenty-eight of these were premature babies. Syphilis was undoubtedly a great factor in 17 of them. Ten cases can be definitely classed as due to prematurity. Long labor, continuing over two or three days prior to their admission to the hospital, accounts for two deaths. There were two cases of hydrocephalus, one of which was syphilitic. There was one case of polyhydramnious, and four cases of premature separation of the placenta, one of which was syphilitic. There were three cases of toxemia of pregnancy, one of which was syphilitic. In four cases, the cause of death was unknown.

TABLE III.

Deaths during delivery	22
Premature	2
Prolapse of cord	2
Cord about neck	1
Separation of placenta	2
Birth trauma	12
Syphilis	2
Asphyxia	2
Malformation	1

In the third table are those in which death occurred during delivery. According to Table III, there were 22, two of which were premature babies. Two deaths which occurred were due to asphyxia. In one case the cord was wrapped about the neck three times. There were two cases of premature separation of the placenta, two cases in which syphilis was a definite cause, and one case of malformation which breathed several times following delivery but was put in this class of cases. In 12 cases birth trauma was the definite cause of death. There were four cases of cerebral hemorrhage, one fracture of skull, and one separation of vertebræ

TABLE IV.
DEATHS

Total deliveries	1,716		
Still births	85	4.5%	
Living births	1,631		8.6%
Deaths	60	3.7%	
Premature	43	71%	
Full-term	17	29%	
Autopsies	23	38%	

During the period studied, 1,631 babies reached the nursery. Of these, 60 or 3.7% died. Of these, 43 or 71% were premature babies whose birth weights averaged 3 pounds 6 ounces. There were a number of very small babies in this group. There were 17 full-term babies. Twenty-three autopsies were performed. The combined death rate of 8.6% is higher than the infant mortality rate for the state. This can be accounted for by the type of cases treated. Thirty-six or 60% died within the first twenty-four hours after birth; four died the second day; four died in the second week; three died from the second to the seventh day, and three died after the fourteenth day.

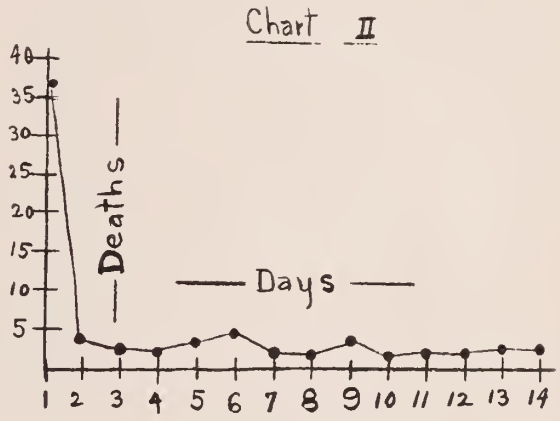


CHART II.

Of the 60 babies who died, 43 were spontaneous deliveries, 3 were delivered by forceps, 9 by version, and 5 by Césarean section. Thirty-three of these babies who died at birth had a subnormal temperature. Fourteen deaths occurred with babies having a normal temperature, and 13 deaths were accompanied by fever. The ratio of males to females is as 143 is to 100—slightly greater than the ratio in the stillborn group.

TABLE V.

Premature	30
Premature and syphilis	9
Hemorrhage:	
Cerebral	4
Peritoneal (liver hemangioma)	1
Gastric	1
Atelectasis	4

Pneumonia:	
Lobar	1
Broncho	2
Peritonitis	2
Septic infection	1
Diaphragmatic hernia	1
Meningitis-meningocele	1
Colloid goiter	1
Status lymphatious	1

According to Table V, it is found that there were thirty cases in which prematurity was the cause of death and there were nine cases of prematurity and syphilis. Six infants died of hemorrhage, four of cerebral hemorrhage, one of peritoneal hemorrhage due to rupture of a large hemangioma of the liver, and there was one case of gastric hemorrhage. This was diagnosed prior to death and was confirmed by autopsy. The exact cause of bleeding in this case was not determined. Atelectasis was found in four cases, one of which was associated with syphilis. There was one case of lobar pneumonia and two cases of broncho-pneumonia. There were two cases of peritonitis, neither of which was diagnosed prior to death. There was one case of septic infection with the portal of entry at the umbilicus. Cultures taken from the umbilical vessels within the abdominal cavity showed bacillus subtilis. There was one case of diaphragmatic hernia, one case of meningitis due to the ulceration of a large meningocele, and one case of a colloid goiter. There was one case of status lymphaticus in which all the lymphatic structures were enlarged, especially the thymus gland.

The Body Temperature.—The behavior of the body temperature of the newborn illustrates the backwardness of the functions in general. Rectal temperatures of the newborn, if taken immediately after birth, are usually higher than the rectal temperature of the mother, but would compare with the temperature of the uterus. This temperature usually varies between 98 to 100 degrees. The infant delivered by some obstetrical procedure requiring ether anesthesia has a temperature between 97 and 98 degrees. In either case the temperature rapidly falls two to four degrees in the next ten to twenty minutes, depending somewhat on the surroundings of the infant and how much care is taken to prevent unnecessary cooling. Temperatures as low as 94 degrees are seen frequently. The first bath, unless given with care, will cause a further reduction of one-half to one degree. After about six hours the temperature rises to what is usually considered normal, varying between 97 and 98 degrees. We find a lower temperature in the morning and a somewhat higher one in the afternoon. This is influenced somewhat by the amount of external heat, the quality and quantity of the clothes, and the vitality of the infant. Premature infants are distinctly thermolabile and wide fluctuations are the rule. The heat regulating center is incompletely developed, and the skin regulating mechanism is incapable of fine adjustments. The temperature of the premature child may fall regardless of the temperature of the incubator bed.

Dealing merely with the external influences, one should take care that excessive cooling does not occur. The obstetrician is usually so absorbed in the mother that the infant is forgotten. The infant should be wrapped up immediately in a warm and sterile blanket and placed in a previously warmed "hot bed."

TABLE VI.
NORMAL DELIVERY—RECTAL TEMPERATURES

Born P.M.	*Degrees*
9:50	99.8
10:00	97.6
10:10	97.2
10:20	97.6
10:30	98.0
10:40	98.2
10:50	98.6
Bath 11:10	98.2
VERSION DELIVERY—ETHER ANESTHESIA	
Born P.M.	*Degrees*
9:10	96.8
9:20	96.0
9:30	95.6
9:40	95.4
9:50	95.6
10:00	95.6
10:10	95.0
10:30	95.6
10:50	95.4
Bath 11:00	95.6
A.M.	
1:30	97.2

Incidence of Fever.—The occurrence of fever in the newborn is a fairly frequent condition and is always somewhat alarming. It is a good indication of illness in the infant. We use an arbitrary ruling and consider a temperature of 100 degrees or above as fever. In a series of 1,972 cases reported in December, 1927,[4] fever occurred in 14.7%, but varied in different nurseries. In the present series (Table VII) of 3,051 infants, fever occurred in 253 cases, or 8.2%. It varied for the three nurseries respectively 7.2%, 8.9%, and 11.1%.

TABLE VII.
INCIDENCE OF FEVER

	Cases	*Fever Cases*	*Per Cent*
Nursery 1	1,670	121	7.2
Nursery 2	996	89	8.9
Nursery 3	385	43	11.1
Total	3,051	253	8.2

The day on which fever occurred is well shown in Chart III. The second, third, fourth and fifth days show the greatest incidence. This chart shows the record for the nursery at the Philadelphia Lying-In Hospital over a two-year period.

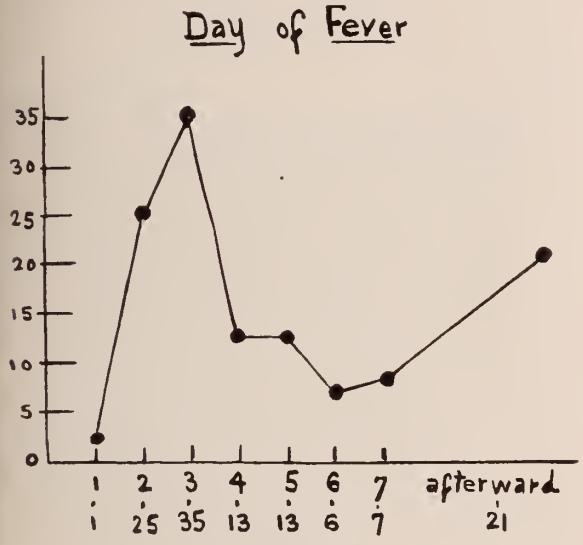


CHART III.
TEMPERATURE

A closer analysis of this group of 121 cases of fever, according to causes and the day of occurrence, is given in Table VIII.

TABLE VIII.

CAUSES OF FEVER—ACCORDING TO DAYS

									Total
Dehydration	1	14	27	10	8	0	3	2	66
Birth Injury		3	3	0	1	1	1	0	9
Infection		1	4	2	3	4	1	10	25
Hot Bed		5	1	1	0	1	2	2	12
Unknown		2	0	0	1	0	0	6	9
Days	1	2	3	4	5	6	7	*after*	121

Dehydration as the cause of fever was found in 65 cases or 53%. This condition occurs during the second, third, fourth and fifth days, and is quite characteristic. The temperature may be 100 to 105 degrees. It is usually sudden in onset and rises rapidly to its height and falls rapidly when appropriate treatment is given. The entire course of the fever seldom extends over twenty-four hours. Dehydration fever is closely associated with the loss of weight of the infant. In the 66 cases of dehydration fever the average weight loss was 10% as compared with the weight loss of 3,051 babies at 6.5%. The day of the lowest weight occurred simultaneously with the fever in all of the 66 cases. The treatment of this condition consists in assisting the infant to get the first secretion from the mother's breast, in giving fluid by mouth, both water and suitable milk formula, and in giving a colonic irrigation. It has been noted that dehydration fever is more likely to occur when the meconium persists in the rectum of the infant.

The etiology of dehydration fever (or inanition fever, as it is variously called) has been ascribed to a lack of fluids or a lack of foods. Sherman has shown that there is a disturbance of the blood chemistry with a marked increase of the blood urea nitrogen and amino acids, with a decrease of the carbon dioxide combining power, giving an acidosis.

There appears to be a close relation between the persistence of the meconium in the rectum and the occurrence of dehydration fever. One wonders whether the fever might be caused by bacterial absorption or absorptions of bacterial toxins from the rectum. In a former paper, previously referred to, a report of rectal cultures taken within the first twenty-four hours after birth was given, showing only two sterile cultures in 33 cases. A more recent study of bacterial invasion of the rectum gave the following results as shown in Table IX:

TABLE IX.

Total cases	65
B. Coli	31
Staphylococcus	26
Streptococcus Viridans	15
Strepococcus Hemolyticus	10
B. Proteus	7
B. Subtilis	2
Sterile	9

Birth injury, and particularly cerebral hemorrhage, as a cause of fever in the newborn must be considered. It was the cause of fever in nine cases, or 7.4%. Fever due to cerebral hemorrhage usually comes on at about the end of the first twenty-four hours, is not related to weight loss, and is usually accompanied by other signs and symptoms of cerebral injury. Not every case of cerebral hemorrhage has fever, and some are practically symptomless.

Infection as a cause of fever in the newborn occurred in twenty-five cases, or 20%. Fever due to infection usually comes on later than dehydration fever and fever due to birth trauma. It is more persistent and generally one can find the infection. Table X gives the types of infection found in the twenty-five cases here reported. Very probably more of the cases of dehydration fever belong in this group, although the infection was not found.

TABLE X.

TYPES OF INFECTION

Abscesses:	Breast	1	Peritonitis	1
	Cervical	1	Pyelitis	1
	Axillary	1	Bronchopneumonia	5
	Scalp	1	Enteritis	5
Erysipelas		2	Otitis Media	1
Pyemia		2	Sinusitis	1
Meningitis		1	Circumcision	2

It has been suggested that there is a relation between the external temperature and dehydration fever. Chart IV shows the occurrence of fever in relation to the months of the year. Fewer cases occur in the hot months of June, July, August and September than in any four of the other months. It has been my experience that there are more cases of fever occurring during the winter and early spring months than during the hot season.

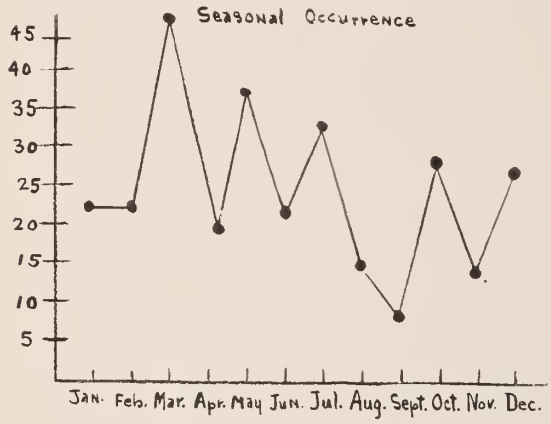


CHART IV.

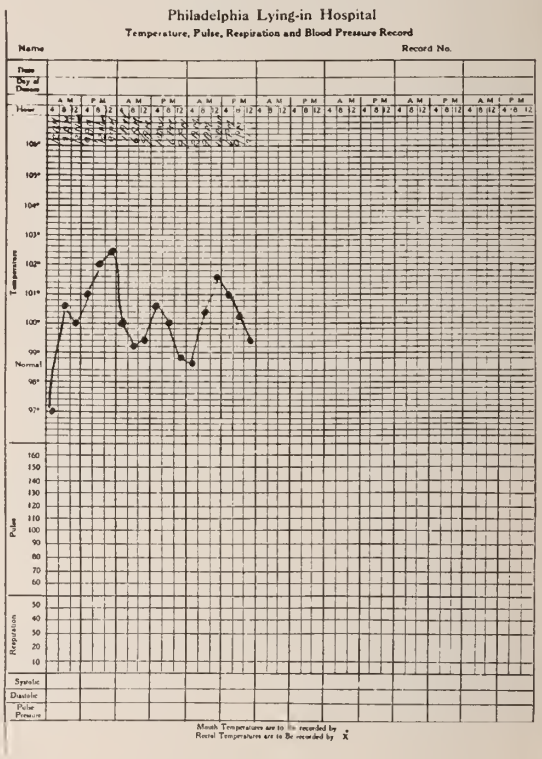
A number of cases (12) of fever were undoubtedly due to overheating in "hot beds," but these were premature babies whose heat-regulating mechanism was unstable.

Weight.—Weight changes in the newborn are interesting and are a sensitive index of the wellbeing of the infant. During the first two or four days, newly-born children lose weight. An occasional case does not lose, but gains from the first day. See

TABLE XI.

		Birth Weight	*% Loss*	*Gain*
Males	1,547	7 lb. 2 oz.		
Females	1,504	6 lb. 13 oz.		
Totalcases	3,051	6 lb. 15.8 oz.	6.5%	9.9 oz
Regained birth weight			1,800	59%
Day regained birth weight			8.5 days	
Big Babies	1,648	Regained birth wt.	905	55%
Small Babies	1,403	Regained birth wt.	888	63%

According to Table XI, the average loss of 3,051 babies was 6.5%. It has been our custom to place the normal weight loss at 9% or under. Anything above that figure is excessive, and an effort is made to prevent its occurrence, and, if it happens, to find



the cause. According to Table XI, the boys' birth weight was 5 ounces more than the girls'.

Eighteen hundred babies, or 59%, regained their birth weight in the two weeks they remained in the hospital. It is noted that the small babies had a better percentage regaining birth weight than the large babies. Multipara and primipara nurse their babies about on a par. The mothers under 20 years of age and the mothers over 30 years do about as well nursing their babies as those mothers between 20 and 30 years, the supposed best nursing years.

Hemorrhage of the Newborn.—Hemorrhage of the newborn is not uncommon. It occurs more frequently in the first week of life than at other periods. The sexes seem to be equally affected. These hemorrhages may occur from any of the mucous membranes of the body—nose, mouth, stomach, intestines, genital tract, puncture wounds of the skin, insecurely tied cord, into various internal organs and subcutaneously. They are associated with trauma, infection, ulceration, intoxication, and that peculiar hemorrhagic tendency of the newborn. It has been

suggested by Lucas that there is a defect in the blood coagulation of the newborn characterized by a reduction of the prothrombin, and that the tendency to bleed is similar to the potential tendency to jaundice.

Frequency.—In a two-year period comprising 1927 and 1928 at the Philadelphia Lying-In Hospital, there were 27 babies who had some form of hemorrhage. There were 1,670 deliveries during this same period. That makes 1.6% incidence. There may have been more cases of hemorrhage that were not detected. Of this number, 6 were cases of hemorrhagic disease of the newborn in which the bleeding and coagulation times were prolonged, 12 cases of intracranial hemorrhage, 4 cases of cephalhematomas, one case of intestinal hemorrhage, 2 cases of genitourinary bleeding, 1 hematoma of the sternomastoid muscle, and 1 cord hemorrhage associated with syphilis. These were all clinical diagnoses and not autopsy records. It has been estimated, by various authors, that hemorrhage occurs in the newborn .1% to as high as 25%.

In all cases of bleeding in the newborn, bleeding and coagulation times with hemoglobin and red-cell estimation should be carried out at once. A simple stab puncture in the heel with a collection of blood in a capillary tube about 1 mm. in diameter will do for the coagulation time. The capillary tube should be broken every half-minute after the first three minutes to see how soon coagulation occurs. Coagulation time under six minutes may be considered normal. The stab puncture wound should be wiped every half-minute with blotting-paper until bleeding ceases. Bleeding time under six minutes may be considered as normal.

In a small group of 100 babies, the bleeding and coagulation times were as follows, according to Table XII:

TABLE XII.

	Coagulation Time	*Bleeding Time*
Under 3 min.	25 cases	44 cases
3 to 6 min.	61 "	50 "
Over 6 min.	6 "	6 "

In two of the cases the bleeding and coagulation times were over 15 minutes and were definite cases of hemorrhagic disease of the newborn. One infant died in spite of active treatment; the other one responded promptly to blood transfusion.

There were 65 males and 35 females in this group. The baby that died was a boy; the other was a girl. At the present time we have a definite case of hemorrhagic disease in a three-day-old female infant. Two years ago this child's mother gave birth to a boy baby who also had true hemorrhagic disease of the newborn. Both children recovered from the condition.

Only 9 of the 100 cases were tested before the fifth day; the other 91 babies were from 5 to 10 days old. Rodda has shown that the bleeding and coagulation times are longer from the third to the fifth days than they are prior to or subsequent to that time.

The prognosis of hemorrhagic cases depends on the location of the bleeding and the promptness of the treatment. The large pulmonary, cerebral, adrenal and gastric hemorrhages are usually fatal.

The active treatment consists in blood transfusion. This may be given intramuscularly in 20 to 30 c.c. amounts of whole blood. It may be given intraperitoneally, using 50 to 100 c.c. of citrated blood. The baby may be given an intravenous transfusion of whole or citrated blood by way of the superior longitudinal sinus in 20 to 30 c.c. amounts. If the first two methods are used, blood typing will not be necessary, but is imperative if given intravenously. The blood group of the mother and baby are not always the same. We believe that the hemorrhagic case should be given three transfusions in twenty-four hours after the diagnosis is made. It is seldom that the intramuscular and intraperitoneal transfusions fail to check the process. Much depends upon the promptness of treatment. It is well to use the mother's blood so that no delay is caused by awaiting a Wasserman report on the donor's blood.

If syphilis complicates the picture, begin active treatment. Sulpharsphenamine in .05 gm. doses, given intramuscularly, is useful. Thromboplastin in 10 c.c. amounts and para-thor-mome in 3-unit doses seem to be of benefit.

The infant should not nurse at the breast, but should receive breast milk by dropper or spoon. External heat is essential.

The results of treatment are remarkable and spectacular. A dying baby is rapidly transformed and quite promptly restored to health. The bleeding and coagulating times become normal in twenty-four to forty-eight hours.

REFERENCES

1. *American Journal of Diseases of Children*, July, 1927.
2. *American Journal of Diseases of Children*, August, 1928.
3. *American Journal of Diseases of Children*.
4. *American Journal of Diseases of Children*, December, 1927.

PRESERVING THE PELVIC FLOOR DURING LABOR *

By R. A. D. GILLIS, M.D.,
Pittsburgh, Pa.

The pelvic floor or pelvic diaphragm is a musculo-fibrous partition which closes in the abdominal cavity inferiorly. It closes in the space known as the pelvic outlet or inferior strait, which is an oval space bounded anteriorly by the symphisis pubis, posteriorly by the tip of the sacrum and coccyx, and laterally on either side by the rami of the pubes and ischia and the great sacro-sciatic ligaments. Just as the abdominal cavity is separated from the thorax by a musculo-fibrous diaphragm, which is pierced by apertures for esophagus, aorta and vena cava, so is the pelvic outlet closed by a similar diaphragm also pierced by three apertures for the passage of the urethra, vagina, and rectum. To these three structures, as well as to the bladder, uterus and adnexa above them, the pelvic diaphragm forms the main support and by its integrity prevents bulging, herniation or prolapse of any of the pelvic or abdominal viscera.

During parturition, however, as the child passes through the vagina, the structures of the pelvic floor are subjected to a great amount of stretching and stress, which, in the majority of cases, it seems unable to withstand and which results in more or less tearing of its fascia or rupture of its muscular fibres. As soon as the structures are torn the ends separate, forming a wide gap similar to that which takes place in the severance of a tendon or muscle elsewhere. This results in relaxation or sagging of the pelvic diaphragm with consequent displacement, prolapse or herniation of the organs to which it gives support, and a relative amount of disability to the patient, depending on the temperament of the patient, the extent of the damage done and the skill with which it has been repaired.

In order that you may more fully understand what is to follow, I crave your indulgence for a few minutes while we go over again, in more detail, the anatomy of the pelvic floor or diaphragm. This properly includes all the structures which close in the pelvic outlet from the peritoneum above to the skin below. It consists of two distinct layers of muscles and their fascial coverings.

The inferior layer, derived from the primitive cloaca, includes the deep and superficial, transverse, perineal muscles, the bulbocavernosus, the ischio-cavernosus and the constrictor urethræ. These muscles are, for the most part, sphincters in action and have little or no supporting function.

The upper layer forms a broad sheet of muscle and fascia consisting of the levator ani and the ischio-coccygeus muscles on either side, the latter forming the posterior portion of the pelvic diaphragm while the levator ani forms the remaining lateral and anterior portions, except for a short space on the posterior aspect of the symphisis pubis, which is closed in by the triangular ligament, which will be considered later. The levator ani is composed of two separate muscles. The external muscle, the iliococcygeus, arises from the rami of the pubis and the pelvic fascia of the "white line" as far back as the margin of the great sacro-sciatic notch. Its fibres are inserted into the sacrum coccyx and ano-coccygeal raphe. The fibres pass from the two sides and decussate with one another in the space between the anus and coccyx. The internal portion of the levator, the pubococcygeus, arises from the fascia on the back of the symphisis pubis, the pubic rami, and from the obturator fascia. The outer and upper third is attached to the sacrum and coccyx; the middle portion, the pubo-rectalis, decussates with its fellow of the opposite side to form a sphincter which slings the rectum to the symphisis pubis and is that portion of the levator most effective in lifting the rectum; the muscle fibres of the innermost third pass behind the vaginal canal without insertion into the vaginal wall to join the longitudinal fibres of the rectum and the external sphincter ani, partly by direct union and partly by decussation with fibres from the opposite side in the space separating the anterior surface of the rectum from the posterior surface of the vagina —the so-called median raphe of the perineum, the musculotendinous spot, or the central body of the perineum, etc. This internal portion of the levator ani forms, with its fellow of the opposite side, a sling for or constrictor of the vagina posteriorly, and is the portion subjected to the greatest amount of stretching and strain during labor. Injury to the fascia and muscle in this location results in many cases from the overstretching incident to even natural labor, and, as can be readily seen, is one of the chief predisposing factors in the causation of rectocele.

The levator muscle is covered by fascia, the upper surface by the "recto-vesical fascia," "fascia supra diaphragmatica," or the visceral layer of pelvic fascia which completely closes in the pelvic canal except

* Read before the Monongalia County Medical Society, March 5, 1929.

for the openings of the urethra, vagina, and rectum. The lower surface is covered by the "anal fascia" or "fascia infra diaphragmatica," forming the inner wall of the ischiorectal fossa and blending with the perineal and ano-coccygeal raphes. At the free border of the levator ani muscle, as it encircles the vagina laterally and posteriorly, the upper recto-vesical layer fuses with the lower anal layer. This forms a fascia sling between the rectum and vagina, and, as has already been stated, this is the portion subjected to the greatest stress and strain during labor, and, when injured, is directly concerned with the formation of rectocele.

Closing in the open space between the pubic rami and the inner border of the levator bundles is the "urogenital trigone" or "triangular ligament." It is composed of two strong fascial layers attached in front and at sides to the pubis and iscio-pubic rami as far back as the ischial tuberosities. Posteriorly and laterally it lies below and overlaps the levator muscle and its fascia. Its upper layer blends with the lower layer of the levator fascia. Between the two layers of the triangular ligament lie the deep transverse perineal and the constrictor urethræ muscles. It is pierced by the urethra and vagina, to both of which, as well as to the bladder and uterus above them, it gives considerable support, supplementing that of the recto-vesical fascia above. Overstretching and laceration of the triangular ligament promotes relaxation of the anterior segment of the pelvic floor with the formation of cystocele, urethrocele, and prolapse of the anterior vaginal wall. For practical purposes, therefore, as may be seen from the foregoing description, the structures of the pelvic floor may be arbitrarily divided into two segments; an anterior segment closing in the triangular area between the pubic rami composed from above downward of the anterior half of the rectovesical fascia and below the double layer of the triangular ligament, and a posterior segment composed chiefly of the levator ani muscle and the fascia covering its upper and lower surfaces. As the shape and dimensions of the pelvic outlet are subject to wide variations, so are these two segments of the pelvic floor subjected to widely different amounts of strain and damage. While, in a general way, this may be considered to depend on several factors, such as the size of the child, the age of the gravida, the elasticity of the soft parts, the amount of scar tissue from previous repairs, and so forth, the two most important factors to be considered are, first, the size of the baby's head and, second, the width of the pubic arch and the transverse diameter of the pelvic outlet. On the one hand, when the pubic arch is wide and the distance between the tubera ischii greater than eight centimeters, the presenting parts fit up well between the pubic rami and closely under the symphisis, causing the anterior segment of the pelvic floor to be subjected to the greater amount of stretching and possible injury with the subsequent development of cystocele, urethrocele, and prolapse of the anterior vaginal wall and bladder; whereas, on the other hand, when the pubic arch is narrow and the transverse diameter of the outlet contracted to less than eight centimeters, as is found in the so-called funnel type of pelvis, the presenting part is displaced posteriorly and delivery then takes place more at the expense of the posterior segment of the pelvic floor. In this instance, one would expect a greater incidence of injury to the sling of the pubococcygeus bundle of the levator ani muscle and its fascia, with the subsequent formation of rectocele and, furthermore, rupture posteriorly of the perineal body, vaginal sulci, and, occasionally, the external sphincter ani and rectal wall.

Tissue reaction to stretching and strain depends to a great extent on the length of time allowed for the stretching to occur, or, in other words, on the rapidity or slowness with which the force is applied. That the tissues of the modern woman do not well withstand the tension and stretching incident to the average normal labor, and that injuries to the pelvic soft parts occur in the great majority of so-called normal labors, are well-known facts. How much greater must they be, however, when the amount of the force is greatly increased in intensity and applied and exerted with an unnatural suddenness which does not allow the tissues time to stretch, as obtains in the misuse of pituitrin to hasten delivery, manual dilatation of the birth canal with ironing out of the pelvic floor, the unnecessary and unskilled use of forceps, the too rapid manual extraction of any part of the child without the relaxation of anesthesia and with strong bearing-down effort on the part of the patient; but lastly and most of all I consider the most murderous effect on the pelvic floor to be caused by the rotation of the head from a posterior to an anterior position by means of forceps, as in the Scanzoni maneuver for the treatment of posterior positions. This maneuver, as well as forceful rotation of any kind, is liable to strip the whole pubococcygeus bundle of the levator muscle from its attachment to the pubic ramus and white line on the side

subjected to the greatest amount of strain by the rotation.

Williams states that injuries to the perineum are of very frequent occurrence, and can not always be avoided even under the most skillful treatment. Statements as to their frequency vary considerably, from those of the physician who has not had a single tear in a thousand cases to those who find more or less damage in more than seventy-five per cent of their primiparous labors. In the former case, one would class the attendant as a rather poor observer, because, as estimated by Williams and also by Harrar, lacerations occur in about forty-four per cent of primiparous labors and in about ten per cent of multiparous labors. These figures undoubtedly are given for lacerations characterized by open wounds where the vaginal mucous membrane or skin are torn along with the underlying structures. Such a laceration is easily recognized, and in the majority of cases can be satisfactorily sutured. Much less fortunate are those patients in whom the vaginal integument and skin are not torn but in whom there have been submucous lacerations of the deeper structures of the pelvic floor. It is impossible to recognize such an injury at the time of labor, and these patients are discharged with relaxed supports to the pelvic viscera, greatly enlarged vagina with loose, sagging walls and relaxed, gaping introitus.

To discharge a patient at the end of the puerperium as well as she was before she became pregnant is the supreme test of competent obstetric practice and the only one by which our work should be judged. This wellbeing or fitness applies as well to the integrity of the perineum and pelvic floor, the size of the vagina and the proper supports of the pelvic organs as to the general constitutional health of the mother and child. That this is not accomplished, and that the methods of preventing lacerations and guarding the perineum described in textbooks are inadequate, is mutely but forcibly testified to by the large number of women who flock to the gynecological clinics of the country for the repair of injuries incurred at childbirth, and who state, as the most significant fact in the history of their disability, that they have never been well since the birth of one of their children.

Kelly states that any considerable injury to the perineum means a laceration of the perineal fascias deep and superficial, the urogenital diaphragm, the levator fascia and the anterior fibres of the pubococcygeus bundle of the levator ani muscles with consequent retraction of the muscle and separation of the torn ends. In the laceration of long standing there is always atrophy of disuse. Pomeroy states that every primipara incurs a permanent modification of the pelvic floor in the course of a full-term delivery. In a high percentage of cases this is represented by an open, lacerated wound, and in nearly all of the others concealed damage to the levator ani muscles and fascia is acknowledged to occur and to be the factor paramount in the various degrees of subsequent prolapsus uteri, cystocele and rectocele. We, as gynecologists, are devoting years of thought and ingenious labor to planning and executing operations for the repair of injuries due to childbirth; but, so far, obstetricians have not faced and accepted a reasonable responsibility for the discovery of a plan to prevent, by sound surgical procedures, serious birth divulsion damage to the structures of the pelvic floor. The general attitude toward saving the perineum in the second stage of labor, as advocated by textbooks on obstetrics, is that little can be done except to encourage gradual dilatation by the avoidance of precipitate expulsion or too rapid extraction in unfavorable positions.

Pomeroy concurs with others in the idea that rending the birth canal to enlarge its calibre is strictly unsurgical. In no other phase of the practice of medicine or surgery are tissues allowed to be bruised, overstretched, and rent apart as they are in childbirth, when the same end can be more easily and directly accomplished, and is more in keeping with surgical principles, by cutting the tissues before tearing or divulsion occurs. This may be well accomplished by the operation of episiotomy or perineotomy, which is an incision of the posterior vaginal wall and the structures of the perineum and pelvic floor between the vagina and the rectum, to enlarge the vaginal outlet during delivery. Its chief aim is the prevention of injury to the deep structures of the pelvic floor and the restoration of the parts to an integrity similar to that of the nulliparous state after suturing, which is easily performed in a clean-cut, superficial wound. That it accomplishes this end in the majority of cases may be deduced from the above description of the anatomy and relations of the structures involved. If the incision is made deeply enough and at the proper time, when the vaginal orifice is dilated to a diameter of about four centimeters and when the structures of the pelvic floor and perineum, including the sphincter ani, have been well stretched and not overstretched, the incision will sever the following structures, namely, the vaginal mucosa, the united free border of the

rectovesical and anal fascias, the innermost and shortest portion of the pubococcygeus bundle of the levator muscle, especially where it decussates in the space between the rectum and vagina, the posterior portion of the triangular ligament, the superficial perineal muscles, the superficial fascia, or fascia of Colles, and the skin. The incision may be made in the midline, as in median episiotomy, or laterally or bilaterally, as in oblique, lateral or bilateral episiotomy. The median incision is to be preferred in the majority of cases because it passes through the stronger instead of the weaker structures, relieves tension symmetrically, and provides more ideal conditions for symmetrical reconstruction by suture. The only assailable point in the claim for superiority of the median incision is the risk of injury to the sphincter ani and of extension backward through the anal and rectal wall. This risk can be greatly minimized by having the anal sphincter thoroughly stretched and paralyzed before making the incision, or when in doubt, as in cases of funnel pelvis or when the child is disproportionately large, by using oblique incision. A relaxed sphincter cut in the midline is usually quite accessible for repair, is easily sutured, and heals promptly. Episiotomy by cutting these structures either in the midline by median episiotomy or laterally but cutting through the belly of the muscle on one or both sides as in oblique, lateral or bilateral episitomy, greatly diminishes the tension on the deeper structures of both the anterior and posterior segments of the pelvic floor, prevents submucous and subcutaneous lacerations, and, when properly sutured, restores the parts in the majority of cases to their original state.

In a review of the last three hundred cases of episiotomy done by the writer, primary healing occurred in all cases, superficial infection occurred in three cases (which did not in any way mar the end result), febrile puerperia occurred in twenty-eight cases, twenty-five of which were due to other causes such as mastitis, bronchitis, pyeliits, etc., and three of which were due to infection of the incision, a morbidity of one per cent.

There were six cases of bilateral extension up the vaginal sulci, and eight cases of unilateral extension. The anterior fibres of the external sphincter were cut in six cases. Extension through the external sphincters occurred in seven cases, and extension through the sphincter and involving the rectal wall, the so-called third-degree tear in five cases or in nearly two per cent. The majority of these occurred in the earlier cases before the writer learned to stretch the external sphincter and rectal wall before incising the perineum in cases having a narrow pubic arch or where rapid extraction was necessary before the perineal body and external sphincter were thoroughly stretched and paralyzed, as recommended by Pomeroy. Three of these cases had febrile puerperia, but all healed primarily, giving a good functional result.

Other operations associated with episiotomy in this series were: Breech extraction, fifteen cases; forceps delivery, forty-six cases; version and extraction, one case, and twins, three cases. Old lacerations were repaired in twenty-nine cases, second episiotomy and subsequent delivery done in fifty cases, three episiotomies on the same patient in eight cases, and four episiotomies on the same patient in two cases. In the great majority of instances, the patients are as well in the intervening years as if they had not borne children at all.

DISEASE OF THE HEART VALVES *

By MILTON C. BORMAN, M.S., M.D.
Montgomery, W. Va.

In the conference last week, diseases of the heart muscle were discussed. The statement was made that the majority of heart murmurs *per se* were of no practical significance; that the true value of a heart murmur lay in the evidence of probable heart-muscle damage it presented. That point should be reëmphasized. Heart murmurs, although often presenting evidence of actual endocardial damage, are important in most cases because they point to probable present or future heart-muscle heart damage.

We are not so much interested in whether a valvular lesion is a mitral regurgitation or a mitral stenosis as we are in the fact that there is an actual valvulitis, and that there is a definite etiology. Such knowledge is more practical and of greater value to the patient. It produces more accurate prognosis, more specific therapy, and vitally concerns the problem of prevention of heart disease. Of course, it is valuable to know the exact anatomical lesions and their physiological effects. The study of the patient is incomplete without it. In the past, however, we have emphasized the murmur and not the muscle, and the patient suffered in direct ratio to the difference of opinion and the heat of the argument.

Diagnoses of cardiac diseases should be made only after a very careful and prolonged study. A com-

---

* Read before the second heart conference of the Montgomery Clinic, Montgomery, W. Va., December 5, 1928.

plete diagnosis embraces a statement of the structural cardiac changes, their causes, the type of disturbed function, and the functional cardiac capacity. In order that there may be uniformity, the American Heart Association has published a nomenclature, copies of which I have prepared for you.[1]

A.—ETIOLOGICAL

1—Unknown.
2—Rheumatic fever *
  a—Polyarthritis.
  b—Chorea.
  c—Growing pains.
  d—Tonsillitis.
  e—Pharyngitis.
  f—Others, as purpura, erythema, nodosum, etc.
3—Syphilis *
4—Bacterial infection *
  (Specify bacterium if possible.)
  Here should be classified subacute infective endocarditis (*i.e.*, Streptococcus viridans), chronic endocarditis, etc.
5—Thyroid *
  a—Hyperthyroidism.
  b—Hypothyroidism.
6—Toxic
  a—Bacterial toxin.
  b—Mineral.
  c—Vegetable.
  (Specify if possible.)
7—Neurosis (Cardiac)
8—General systemic disease
  (Specify the disease; *e.g.*, arteriosclerosis, chronic nephritis, diabetes, emphysema, hypertension, anemia, etc.)
9—Trauma
10—Congenital developmental defect.

B.—ANATOMICAL

1—Undiagnosed
2—Atrophy of heart
3—Enlargement of heart
4—Hypertrophy of heart
5—Dilatation of heart
6—Ventricular preponderance
  a—Right.
  b—Left.
7—Auricular hypertrophy
8—Cardiac thrombosis
9—Cardiac infarction
10—Rupture of heart
11—Myocarditis, acute
12—Myocarditis, chronic
12-a†—Fibrosis of myocardium [2]
13—Fatty infiltration
14—Fatty degeneration
15—Endocarditis
  a—Acute.
  b—Chronic.
  (Include the continuous activity of a valvulitis, or papillary muscle, chorda tendinæ and mural infection. Usually, 15 would always preced the 16 diagnosis.)
16—Cardiac valvular disease
  a—Aortic insufficiency.
  b—Aortic stenosis.
  c—Mitral insufficiency.
  d—Mitral stenosis.
  e—Pulmonic insufficiency.
  f—Pulmonic stenosis.
  g—Tricuspid insufficiency.
  h—Tricuspid stenosis
  (Should be thought of as active or inactive as expressed under etiology.)
17—Congenital abnormality
  (Specify lesion if possible.)
18—Pericarditis, acute
  a—Serous
  b—Serofibrinous
  c—Purulent.
19—Hydropericardium
20—Hemopericardium
21—Pneumopericardium
22—Adherent pericardium
23—Aortitis
  a—Without dilatation.
  b—With dilatation.
  (Aortitis, syphilis, in contradistinction to 28, which includes arteriosclerotic changes in the aorta.)
24—Tumor of:
  (Specify part affected.)
25—Aneurysm of:
  (Specify affected vessel.)
26—Embolism of:
  (Specify affected vessel.)
27—Thrombosis of:
  (Specify affected vessel.)
28—Arteriosclerosis of:
  (Specify locality, as coronary arteries, cerebral arteries, etc.)
29—Arteritis of: (*Except aorta*)
  (Specify locality.)
30—Periarteritis of:
  (Specify locality.)
31—No circulatory disease
32—No cardiac disease.

C.—PHYSIOLOGICAL

1—Regular sinus rhythm
2—Ectopic rhythms (*without tachycardia*)
  (This is to be differentiated from ectopic rhythm with tachycardia of the paroxysmal type. In the ectopic rhythms without tachycardia, it is usually believed that the new rhythm has developed because of a depression of the normal pacemaker. Example: Under this heading should be classified such a rhythm as nodal rhythm.)
3—Vagal arrhythmia
  a—Sinus arrhythmia.
  b—Sino-auricular standstill.
  c—Simple bradycardia.
  d—Ventricular escape.
  e—Wandering pacemaker.
4—Tachycardia (*not paroxysmal*)
  a—Sinus.
  b—Ventricular. (Those which have been reported showing this arrhythmia associated with digitalis poisoning should be classified here.)
5—Premature contractions
  a—Auricular.
  b—Junctional.
  c—Ventricular.
  d—Unknown.
6—Paroxysmal tachycardia
  a—Auricular.
  b—Junctional.
  c—Ventricular.
  d—Unknown.
7—Auricular flutter
  a—Paroxysmal.
  b—Chronic.
8—Auricular fibrillation
  a—Paroxysmal.
  b—Chronic.
9—Ventricular fibrillation

---

* In the case of each of these conditions, it should be noted, if possible, whether the etiological factor is still active or is inactive.

† 12-a.—Not a sub-heading of 12, but of independent importance.

10—Auriculoventricular heart-block
  a—Partial block
    (1) Prolonged conduction time.
    (2) Occasional dropped beats (irregular).
    (3) High-grade block (2-1; 3-1; etc.).
  b—Complete block.
11—Intraventricular block
  a—Partial.
  b—Bundle-branch—right or left.
12—Pulsus alternans
13—Valvular incompetency
  a—Mitral insufficiency.
  b—Tricuspid insufficiency.
  c—Pulmonic insufficiency.
  d—Aortic insufficiency.
14—Hypertension
15—Congestive heart failure.
16—Effort syndrome
17—Anginal syndrome.

D.—FUNCTIONAL CAPACITY

1—Patients with organic heart disease able to carry on ordinary physical activity without discomfort.
2—Patients with organic heart disease, unable to carry on ordinary physical activity without discomfort.
  a—Activity slightly limited.
  b—Activity greatly limited.
3—Patients with organic heart disease and with symptoms or signs of heart failure when at rest, unable to carry on any physcial activity without discomfort.

E.—POSSIBLE HEART DISEASE

Patients who show abnormal signs or symptoms referable to the heart but in whom the diagnosis of heart disease is uncertain.

F.—POTENTIAL DISEASE

Patients without circulatory disease whom it is advisable to follow because of the presence or history of an etiological factor which might cause disease.

Examples

Heart Disease:
  A.—Active syphilis.
  B.—Aortitis with dilatation, aneurysm of the ascending aorta.
  C.—Regular sinus rhythm.
  D.—Class 2-A, or
Heart Disease:
  A.—Inactive rheumatic fever (chorea).
  B.—Valvular disease, mitral insufficiency, and mitral stenosis.
  C.—Auricular fibrillation.
  D.—Class 2-B.

In order to save time I have also prepared sheets outlining fundamental data to be used in diagnosing valvular lesions. (Table No. 1.)

TABLE NO. 1
FUNDAMENTAL DIAGNOSTIC DATA FOR THE DIAGNOSIS OF ANATOMICAL ENDOCARDIAL LESIONS

Mitral Stenosis

* Murmur, often low-pitched diastolic rumble, often with presystolic crescendo accentuation, or mid-diastolic (may be necessary for patient to lie on back or side, or exercise).

Mitral Insufficiency

* Cardiac enlargement.
* Apical systolic murmur transmitted to the left axilla.
* Murmur replaces first apical sound left.

Tricuspid Insufficiency

* Prolonged systolic blowing murmur, sometimes harsh; best heard at level 5 chondrosternal junction either over the sternum or just to right of it.
* Cardiac enlargement to right and to left.
* Presence of other cardiac murmurs.
* Systolic expansile hepatic pulsation.
* Systolic external jugular venous pulsation.

Aortic Insufficiency

* Diastolic murmurs in 3 or 4 I.S.L., over sternum, or in 2 or 3 I.S.R. (Heard best with slow heart, breath held at expiration, erect or leaning forward, often with ear direct to chest.)
Cardiac enlargement, especially to left.
Collapsing (Corrigan) pulse.
Large pulse pressure, with lowered diastolic.
Duroziez's to-and-fro murmur.

Aortic Stenosis

Diagnosis made with great caution unless aortic insufficiency is also present.
* Loud, harsh systolic murmur at primary aortic area, transmitted upward.
* Systolic thrill 2 I.S.R.
Faint or absent A^2.
Anacrotic pulse, slow rise and broad summit.

Tricuspid Stenosis

Rare—of rheumatic origin. Similar to mitral stenosis.
Best heard 4 right interspace, near sternum.

Pulmonic Lesions

Rare, except as congenital.
Murmurs present in practically every case.
Developmental defects noted elsewhere in the body.

* Most useful signs.

In dealing with endocarditis we are vitally interested in whether the lesion is benign or malignant.

In benign endocarditis, the onset is insidious. The French describe an early muffling of the heart sounds, which disappears after several days, the valve sounds regaining their clearness. Ten or twelve days after the onset, one of the sounds may become prolonged, blowing and a definite murmur, systolic or diastolic, appears. The rheumatic chain of infections is responsible for the majority of the benign type. The luetic may be considered benign, in a measure, and accounts for a large percentage of aortic valve lesions.

In the malignant form of endocarditis we recognize an acute, a subacute, and a prolonged form. In the acute form there are two types, the typhoid and the pyemic. Although it is so severe, it may escape attention, being masked by its casual malady. The valvular lesions are preceded by a short period of muffled sounds. The murmurs may be multiple and change character rapidly. Embolic phenomena, petechia, submucosal and subcutaneous, and visceral infarction appear. It is almost invariably fatal, the duration of the disease being three to four weeks. The subacute form occurs almost always in patients already affected with a chronic valvular lesion. Some cases are very much prolonged. They may continue for months, but lead just as inexorably to death. The

streptococcus viridans is the usual etiological factor, although it may be the streptococcus hemolyticus, pneumococcus, influenza bacillus, or the gonococcus.

Treatment.—Benign endocarditis: The treatment of benign endocarditis of the rheumatic type was outlined in last week's conference. It consists in prolonged rest after the acute infection, the removal of tonsils, adenoids, carious teeth, and cleaning up of all foci of infection, the prevention of acute infections, especially upper respiratory; high caloric feeding, the use of salicylates, fresh air, sunshine, and improved general hygiene. J. C. Small uses a specific antiserum followed by vaccines. If the lesion is luetic, specific treatment in the form of mercury, bismuth, iodides, and occasionally the arsenicals, is used. The luetic patient, however, should not go untreated to develop aortitis, aortic regurgitation, and possible aneurysm.

Malignant endocarditis: The treatment of the malignant form is most disappointing. The original focus of infection should be cleared up. Antistreptococcic serum may be of service in the future. Repeated blood transfusions may combat the increasing anemia and toxemia. The treatment is essentially palliative, and thus far has produced no apparent results.

In the medical department of this hospital during the past two years we have had five cases of malignant endocarditis. Post-mortem examination was performed in each instance. None of the cases were simply terminal conditions. The outstanding lesion in each case was the cardiac lesion. The specimens of four have been preserved and will be shown to you. There were three men and two women. Their ages varied from 23 to 36, four being between 32 and 36 years old. Only one case presented any problem in diagnosis. This, no doubt, was the prolonged form. Three were of the subacute form. All were very virulent. Blood cultures in two were sterile. One blood culture was positive for the gonococcus. One revealed bacillus influenza with streptococcus viridans, and the third was positive for streptococcus viridans. The approximate duration of illness varied from 18 days to slightly more than six months.

CASE I.—This young man is 27 years old. One year ago, after ten days' study in this hospital, his appendix was removed under local anesthesia. From childhood up to adolescence he had had attacks of acute rheumatic fever. There were no other rheumatic chain infections. For three years, at that time, he had noted dyspnea on running or climbing a grade. The cardiac apex was palpable 12 cm. to the left of the mid-sternal line in the fifth interspace. There was a loud to-and-fro murmur heard over the whole precordium. The rhythm of the heart was normal. There were carious teeth. The tonsils appeared diseased. We urged tonsillectomy. The patient agreed to return later for the operation. On October 15th of this year he returned, complaining of dyspnea of three months' duration noted on moderate exertion, so that he was unable to work as a coal loader in the mines. The cardiac apex was palpated in the fifth interspace 13 cm. to the left of the mid-sternal line. Teleoröntgenogram revealed the following cardiac measurements: M.L. 11.5; M.R. 6.0; internal thoracic 29.0; longitudinal 18.2; O G 7.0; G G′ 11.2; G′ D′ 15.0; D D′ 10.2; f 2.5; aorta 5.4 (level of second rib). There was an absolute arrhythmia as shown in the electrocardiograms (See Fig. 1). A local tonsillectomy was

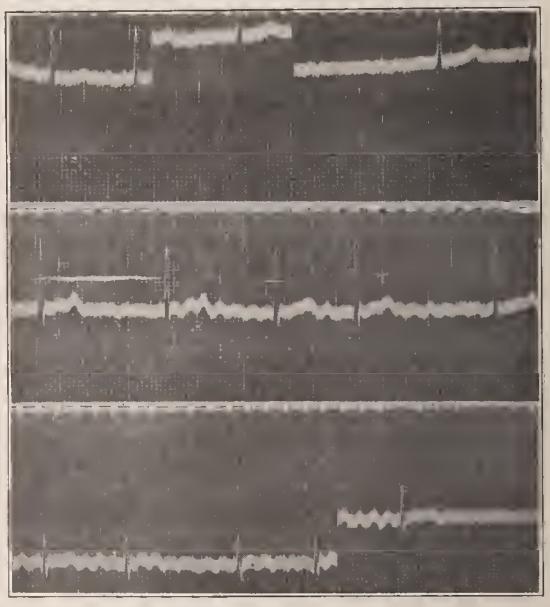


FIG. NO. 1.

performed, patient was digitalized, and dental hygiene was advised. This patient is now receiving ten minims of a fat-free tincture of digitalis daily, which holds the cardiac rate between 70 and 80.

This patient has a loud to-and-fro murmur, heard best over the pulmonic area, which is of rheumatic origin and is the result of a mitral stenosis and insufficiency. There is no evidence of aortic involvement. I wish to point out that the important physical findings are not the murmurs. The cardiac enlargement and the auricular fibrillation are the important findings. There is no question but that

the etiology is rheumatism. Treatment consists in the prevention of all kinds of infections, especially of the upper respiratory tract, and getting patient to limit his physical activity to a point of absolute comfort. The fact that, at the present time, he is able to walk on level ground without discomfort is hopeful. That the lesion has progressed during the past year, as indicated by the appearance of the auricular fibrillation, suggests that the lesion is active and the prognosis, therefore, is guarded.

CASE II.—The second patient has a cardiac murmur, the exact method of its production being questionable. We do know the etiology, however, and can therefore treat the condition. From the practical point of view, that is all that is necessary. This emphasizes again the relative insignificance of the cardiac murmur except in so far as it calls our attention to other factors relative to the cardiovascular apparatus. This patient is a white boy, thirteen years old, complaining of an injury to his left leg. Routine blood serological studies revealed a positive Wasserman and Meinicke. A diagnosis of gumma

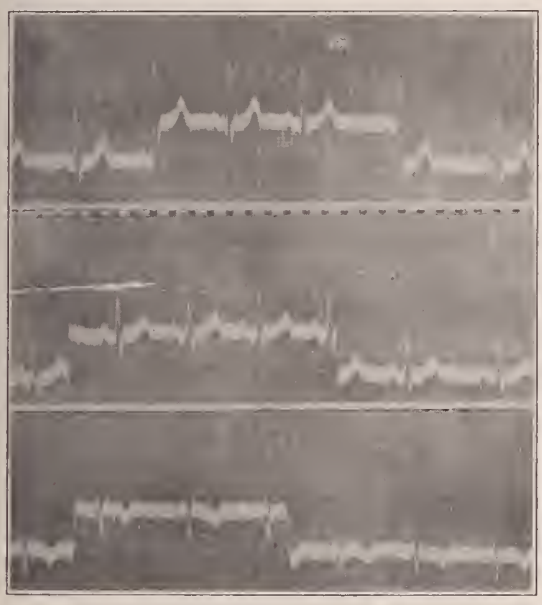


FIG. NO. 2.

of the leg was made. Because of a blood-pressure of 140/74 and a cardiac rate of 100, a medical consultation was requested. Examination revealed visible pulsation in the vessels at the base of the neck, a positive digital capillary pulsation, and a negative Duroziez's sign. There was prolongation of the first sound over the primary aortic area, the murmur being transmitted into the vessels of the neck. Teleoröntgenogram revealed a globular-shaped heart with a bulging upward and to the left in the left auricular region. Measurements: M.L. 9.8; M.R. 4.0; T. 23.5; L 15.2; f 1.4; O G 6.5; G G′ 7.4; D′ G′ 13.4. Electrocardiogram was normal. (See Fig. 2.)

It is probable that a luetic aortitis is responsible for the production of the cardiac murmur. The wide pulse pressure suggests that the process has spread downward to involve the aortic leaflets. Active antiluetic treatment has been begun. We have cautioned against the use of arsenicals in this case. Mercury, iodides, and bismuth should be used.

REFERENCES

1. A Nomenclature for Cardiac Diagnosis. *Am. Heart J.*, 1926, 2: 202.

2. Criteria for the Classification and Diagnosis of Heart Disease. Paul B. Hoeber, 1928.

A CLINICAL AND PATHOLOGICAL STUDY OF GOITER *

By ROBERT KING BUFORD, PH.G., M.D., F.A.C.S.
Charleston, W. Va.

The thyroid gland is present in all vertebrates, and, even in the most primitive, is composed of closed vesicles containing so-called colloid material. Moreover, throughout the vertebrates the thyroid takes origin, for the most part if not entirely, from a median anlage which grows down from the ventral wall of the pharynx.

In the human embryo, the median anlage occurs at a very early stage (Broman, 5, 2.5 millimeters) as an evagination from the mesial portion of the ventral wall of the primitive pharynx. The evagination quickly develops into a sac, the orifice of which opens on the summit of the tuberculum impar and then migrates backward to its posterior boundary furrow; the pouch becomes bilobed and travels caudally.

The thyroglossal duct, which for a time has a double lumen, atrophies; and soon the thyroid breaks its connection with the pharynx (7 to 8 millimeters, Broman). The organ then becomes a broad structure composed of irregular cords of cells disposed, for the most part, transversely. In a 50-millimeter vertex breech embryo, some of the thyroid cords develop lumina, become beaded, and soon thereafter break up into rudimentary follicles. Probably for some time after birth the formation of thyroid continues. Iodine, which is so charac-

* Presented to the Section on Surgery of the West Virginia State Medical Association at Fairmont on May 23, 1928.

From the Thyroid Clinic, Charleston General Hospital.

teristic of the adult thyroid, is not present until some months after birth.

From the dorsal part of the third branchial pouch the third epithelial body arises, while from the ventral portion the greater part, if not all, of the thymus is developed. When the thymus migrates caudally, it carries along with it the third epithelial body, which, in man, is left eventually in the vicinity of the lower pole of the lateral lobe of the thyroid. It is of interest to note that this parathyroid in the sheep and goat is normally embedded in the thymus.

The fourth and fifth pharyngeal pouches, as in lower mammals, give rise to a "complex," consisting of the fourth parathyroid, a thymic rudiment, and the postbranchial body. The fourth parathyroid in man normally remains outside the thyroid gland. The fate of the postbranchial body is not easy to decide, and indeed, according to Grosser, Lewis and McMurrick, has not yet been observed through all its phases. As already stated, the researches of Woelfler, Stieda, and Born on certain mammals led to the belief that, in man, probably a portion of the lateral lobes of the thyroid was derived from the ultimobranchial bodies. No less an authority than Broman (1912) writes that in man the lateral thyroid rudiments develop acini, and, in the third month, can no longer be differentiated from the median thyroid tissue. The prevailing opinion, however, would appear to be that no proof exists of functionating thyroid tissue being derived from any other source than the median pharyngeal rudiment.

There is no essential difference in a thyroid unit throughout the vertebrates. This unit consists of a rounded closed space of highly variable size for averaging from ¼ to ½ mm. in diameter. The condition of the epithelium and colloid is of greater importance. The thyroid gland is so labile that a definition of the normal limits is difficult. The normal cell is flat cuboidal and never taller than cuboidal with a small vesicular nucleus and granular mitochrondia. The colloid completely fills the follicular space.

Oswald and Marine have pointed out the fact that the iodine store and stainable colloid are in general parallel. Whenever the iodine store falls below the normal minimum of one-tenth per cent per gm. of the dried gland, the gland undergoes changes characterized by a general increase in its blood supply, a general decrease in the stainable colloid, and a change in the epithelium from a low cuboidal to columnar; and there are all degrees of gland cell growth from the slightest departure from normal to the most marked proliferation (hyperplasia).

The chemical investigation, by Bauman and Oswald, of the thyroid gland laid the foundation of our present conception of the pathology of goiter. The discovery of iodine as a normal, and proof that it was a necessary constituent of the thyroid gland, led to the discovery and isolation of thyroxin by Kendall and, more recently, the brilliant achievement of Harrington in working out the structural and synthetic production of thyroxin. The function of the thyroid gland is to maintain 14 mg. of thyroxin in the body or to elaborate and deliver 0.33 mg. of thyroxin daily. In the embryo and the newborn, secretion seems to be the only product of the gland and is devoid of iodine. Colloid storage increases to five years after birth, while secretion declines. Secretion predominates in the work of the gland from nine to fifteen years and may overshadow the colloid storage function. Thereafter, from 18 to 20 years, sex determines the picture. The female presents, in the main, one of colloid storage. After eighteen, the female approximates to the male type, except in pregnancy and perhaps in menstruation.

Colloid goiters are soft in consistency, symmetrical in shape, and are characterized pathologically by an excess of colloid in the acini of the gland. Colloid goiter is the nearest condition to normal, physiologically, chemically and anatomically, that a thyroid which has once been hyperplastic can again assume. The process of involution may be arrested at any stage and active hyperplasia begin again. All stages of involution, from the marked active hyperplasia back to the colloid gland, exists just as all stages of hyperplasia exists, and the morphological appearance of a given gland merely represents the state of this cycle at the time of the examination. The anatomical changes are the reverse of those seen during hypertrophy and hyperplasia. The gland as a whole becomes firmer. The color changes from the grayish-red and opaque appearance of the hyperplastic stage to a translucent amber-red color when involution is complete. The blood supply diminishes. The alveoli become highly variable in size (from .1 mm. to 1 cm.). The colloid becomes dense and viscid. Paralleling the accumulation of colloid is a rise in the iodine store, often to the normal or above if involution has been artificially induced. The high columnar epithelium slowly or rapidly returns from columnar to cuboidal and finally to flat cuboidal if the involution is complete. The stroma becomes less

prominent either from compression, decreased vascularity or absorption.

They usually develop about puberty; is much more frequent in the female, bears a definite relation to the establishment of menstruation, and often varies in size with the menstrual cycle, with pregnancy, and with acute infections.

Colloid goiter most likely results from the unusual demand made upon the gland for thyroxin and the inability of the gland to meet added burden thrown upon it. A state of thyroid exhaustion or work hypertrophy is precipitated, and unless. a proper iodine balance is maintained the gland soon becomes unable to secrete the necessary amount of thyroxin, and large quantities of colloid material are secreted and stored in the acini.

The symmetrical enlargement of both lobes and isthmus will sometimes produce tracheal pressure. Occasionally these patients will complain of weakness and palpitation. Frequently the nervousness is due to "goiter phobia," a worry over the knowledge that a goiter exists. The basal metabolic rate is always normal or slightly below, and there is no loss of weight, quadriceps weakness, or high pulse-pressure.

Colloid goiter usually disappears without or with iodine before the patient reaches twenty-five years, in this country. By the proper administration of iodine to the pregnant mother, and to the child until its growth, colloid goiter can be prevented; and by the use of iodine and thyroid extract, combined with hygienic measures, many cases of colloid goiter can be cured after they develop. Colloid goiter frequently involutes into nodular or adenomatous goiter.

ADENOMA

Adenoma is the term commonly applied to a tumor composed of gland tissue. Consequently, adenoma are of many kinds, depending upon the gland tissue from which they arise and the situations in which they are found. Adenomata must be considered as benign glandular tumors. Many observers maintain that thyroid adenomata arise from the dormant interstitial epithelial cells which occur in every normal thyroid gland.

The epithelial parenchymatous portion of the gland consists of, essentially, two elements: the first, well-known acini or alveoli, containing the colloid and lined with a single row of cuboidal or low columnar cells; secondly, in the spaces or interstices between these acini one regularly finds cell rests or islands of vascular epithelial cells without definite structure, which do not take part in the formation of acini and which have been called the "interstited cells." These resemble more the embryonic thyroid cells, and have, therefore, been regarded as dormant thyroid tissue and have been called "fœtal cells," for reasons which are not entirely clear. One or more of these interstitial cell groups begin to grow; a nest of cells is developed which, by and by, takes on various forms of thyroid structure. Th emass grows until it becomes macroscopic in size. The surrounding thyroid tissue begins to atrophy. There is an increase of connective tissue and a capsule develops around this new-formed nodule. This early encapsulation from the remaining normal thyroid tissue is characteristic of adenoma. As the adenoma develops, this nodule of newly formed interstitial cells becomes larger and causes pressure atrophy upon the adjoining thyroid tissue. It may reproduce any microscopic appearance of thyroid tissue with which we are familiar, inasmuch as it is essentially an embryonic growth itself and may eventually become enormous in size.

Adenomata secrete thyroxin, the active principle of thyroid, and as they grow more thyroxin is elaborated and causes symptoms of hyperthyroidism. The adenoma at first is quite firm, being composed of solid gland tissue. Later it undergoes various forms of degeneration, as is so frequent in tumor growth. At first there is fatty degeneration, then autolysis of the central portions with fluid formation, then gradual destruction when hemorrhage into the interia occurs, and eventually a cyst is thus formed, the capsule of which may be enormously thickened and become even calcified in the older cases. This process may consume a period of twenty-five to forty years for its completion. Of course, with this degeneration the activity of the adenoma ceases and thus, if the adenoma is a single one, spontaneous cure of the hyperthyroidism results.

An adenoma of the thyroid gland may be termed the end result of a neglected or unresponsive adolescent goiter. It is a goiter which has spent itself in a glandular effort to supply to the tissues the much-needed thyroxin. It is found most commonly in the fourth and fifth decades of life, and it may remain as an apparently innocent intruder, giving no outward symptoms until activated by some unusual strain demanding excessive thyroid activity. The existing normal thyroid tissue is unable to supply the necessary thyroxin, and a feeble attempt is made by the adenomatous tissue to meet this requirement. Such conditions are precipitated by pregnancy, the

menopause, acute infections, profound grief, shock, or they may appear without apparent cause. An adenoma may be buried in the substance of a colloid goiter and go undetected for years, snugly concealed by excessive colloid material. The gland is firm, contains one or more palpable nodulations as a fibrous capsule and a connective tissue of variable thickness and density. There is definite cell proliferation in contrast to colloid goiter, which is one of secretion and absorption. The proliferation may take place indefinitely in encapsulated areas which are known as fœtal adenomas, or a diffuse cell proliferation may be present, giving the picture of adenoma involving the entire gland. This proliferation may be either a definite multiplication of acini, characteristic of an uncomplicated true adenoma; or the proliferated epithelium cells may mass together, forming papillary projections into the acini. Perhaps a third form develops in which the interstitial cells predominate. The fœtal adenoma is a well-encapsulated portion of the gland, of miniature development, and has the structure of the fœtal gland. It is made up of closely compacted sections of the gland with small cells and little or no colloid. The cellular changes are not present, but the increase in glandular acini produces the enlargement of the tumor mass. These tumors may be present alone and permit of easy enucleation from the normal gland tissues, or they may be only a part of a general glandular hypertrophy and found imbedded in a diffuse adenomatous mass. The diffuse adenomatous or nodular goiter is characterized by a general proliferation of acini which may be small or large, containing little or no colloid to a fairly large amount in the large lumen of the acini, similar to the colloid seen in adolescent goiter. The cells are cuboidal in shape and do not produce papillary projections into the lumen, and the characteristic enfolding of the epithelium in Graves' disease are present.

In the diffuse adenomatous type there is no pathological difference between the toxic and the non-toxic specimen. Small areas may present hypertrophy both in the adenomatous and the non-adenomatous tissue which resembles, in the individual cell appearance, Graves' disease. But they are few. The characteristic enfolding of the epithelium is not present. Many areas of degeneration are often found. Large hemorrhages may occur, which may later partially absorb, causing a diminution in the size of the gland, giving the impression to the patient that some particular form of medical or charlatan treatment is producing a cure. These hemorrhagic areas may later undergo liquefaction with the subsequent formation of a well-developed cyst, which to the end may show evidence of the original hemorrhage. Calcareous deposits may develop to an extensive degree; they occur in long-standing goiters and present many variations, such as shell formation, septæ, or the complete involvement of an entire lobe. The calcareous deposits may increase to an alarming degree the difficulty of removal. Firm fixation may exist between the gland and the trachea, erosion to the trachea may have occurred, mediastinal fixation may be present, and extensive involvement of the superior pole may greatly handicap the ligation of these structures.

Extensive fibrous changes may occur and the gland become very hard, the epithelium become strangulated, degenerated, and lying unattached in the meshes of the colloid. The cells may become detached and pressed together in such a manner that they appear as cell nests surrounded by connective tissue, giving the impression of malignant change. However, it will be noted that the cells are degenerated and that hyaloid and myxomatous changes have occurred in the fibrous tisue. Hertzler states that these are the only true innocent goiters. An extensive fibrous degeneration of a goiter may produce all the evidence of a myxedema and yet the patient present a well-marked goiter.

HYPERTHYROIDISM

Graves' disease is a aporodic disease of unknown etiology which results mainly from an abnormally increased activity of the thyroid gland.

The exophthalmos occurs in fifty per cent within a few months, and in nearly ninety per cent within two years. There is tachycardia, but a steady pulse until degeneration occurs late in the disease.

The three cardinal symptoms, exophthalmos goiter and tachycardia, have been emphasized to the extent that the majority of physicians procrastinate until eye-signs are present, overlooking the early symptoms of hyperthyroidism when treatment could be instituted with practically no mortality and the elimination of residual symptoms often seen in neglected cases following operation. Graves' disease or hyperplastic goiter are the terms that have been adopted in our clinic.

Immediately after the description of Graves' disease, speculation as to the thyrogenous origin arose. In 1885, Sir Victor Horsley asserted that the thyroid body is first affected and that all the symptoms are to be explained by an altered function, or dys-

thyroidism. In 1886, however, Mobius ascribed altered functions, but merely with an excess of a normal function. In the light, however, of recent advances in our knowledge of the functions of the thyroid gland, the weight of evidence has pointed to the improbability of a dysthyroidism and to the likelihood that the signs and symptoms of hyperthyroidism are the result of an excessive amount of secretion or of a simple but extreme overactivity of the thyroid gland. There has never been any experimental or clinical data of consequence to support the hypothesis of dysthyroidism.

The theory of Mobius, on the other hand, is well supported by arguments based on an abundance of clinical and experimental evidence, such as:

1. The reproduction of the main signs and symptoms of hyperthyroidism by the administration of thyroid extract to man and animals, and the relief of hypothyroidism by thyroid extract would suggest that the active principle of the gland is contained in the extract. Therefore, if the signs and symptoms of the disease process, hyperthyroidism, can be produced by the administration of the thyroid extract, it is only reasonable to assume that such signs and symptoms, occurring spontaneously, result from an overactivity of the thyroid gland.

2. The constant association of hyperplasia of the parenchyma of the thyroid gland and the amelioration, during an iodine remission, of the disease process with the restitution of the patient to an approximately normal physiological status concomitantly with the involution of the hyperplastic thyroid parenchyma to the microscopical appearance more nearly resembling that of a normal gland.

3. Decrease in the basal metabolic rate during an artificial and spontaneous remission, associated with deposition of the colloid and involution of the thyroid gland.

4. Elevation of the basal metabolic rate following administration of thyroid extract and also associated with hypertrophy and hyperplasia of thyroid parenchyma.

5. No other constant pathological lesion of any consequence other than hypertrophy and hyperplasia of the thyroid gland has ever been demonstrated in cases of hyperthyroidism.

6. Cure of the disease process, hyperthyroidism by surgical removal of ninety per cent of the thyroid parenchyma.

The histological changes due to hypertrophy and hyperplasia of the thyroid gland were first described in 1886 by Sir Victor Horsley and again in 1896 by Halstead, following observations on the compensatory hypertrophy and hyperplasia in dogs. In the same year Lubarsch pointed out the changes in the microscopical appearance of the thyroid, denoting hypertrophy and hyperplasia of the parenchyma. A. Kocher (1902), Haseumann (1905), Lewis (1906), MacCallem (1907), confirmed Lubarsch's observation.

The histological changes characteristic of Graves' disease are:

1. Increase in size and weight of the entire gland.
2. Increase in blood and lymph flow through the gland.
3. Increase in fibrous connective tissue throughout the gland.
4. Infiltration of the stroma with small lymphcytes.
5. Hypertrophy and hyperplasia of the epithelium, with papillamotous infolding into the acini.
6. Vasculation and increased viscidity of the colloid.
7. Questionable increase in the number of small acini. (Rienhöff.)

Recently, several noteworthy papers have appeared in the literature by Cattell, Rienhoff, and Sager. Cattell's conclusions are that, after the administration of iodine, there is a decrease in vascularity, hyperplasia and hypertrophy, an increase in colloid and a decrease in the amount of connective tissue; that lymphocytic foci remain, as well as numerous scars, and that there is an increase in iodine content of the gland. Rienhoff's conclusions are that there is an increase in the thyroid gland as a whole, a decrease in vascularity and probably in lymph flow through the gland, a large increase in the colloid deposited and contained within the thyroid, a change in the acini from lace-like ingrowths to round, even-walled acini, regular in size and shape, and a change in the nuclei from clear nuclei to a small, irregular, pyknotic type. He observed many mitotic figures before the use of iodine and noted their absence after iodine had been given.

Sager found an increase in colloid and a decrease in hypertrophy and hyperplasia in the thyroid gland after the administration of iodine. There is probably a decrease in the amount of connective tissue and in the size of the arteries and capillaries. Iodine does not have any effect on the number of lymphocytes present.

Marine, in writing on the pathologic anatomy of Graves' disease, stated that, as the colloid accumulates in the gland during a retrogressive stage, the

high columnar epithelium with its infoldings slowly returns to cuboidal. If the involution to a colloid type of goiter is complete, the infoldings take on more of the appearance of small tufts of stroma, jutting into the follicular lumen covered with the prevailing type of epithelium. Marine and Lenhart, discussing the reversion taking place in the thyroid in cases of Graves' disease not treated with iodine, described anatomic changes that can not be differentiated from the changes which take place in the gland in Graves' disease after treatment with iodine, except that after treatment with iodine there seems to be more of a tendency for the hyperplasia to disappear without leaving a trace of its presence in the form of the tufts already described.

Giordano and Caylor observed, in the glands removed following preoperative ligation, an increase in the number of sprig-like processes, which MacCallum has considered the remains of hyperplastic tufts, with a decrease in the amount of actual hyperplasia.

The change taking place in the gland in Graves' disease after iodine has been given is similar to that described by Marine during reversion in Graves' disease and similar to what Halstead predicted would occur during reversion of a hyperplastic gland to normal.

The frozen sections of Graves' disease which we studied, following the administration of Lugol's solution, showed less columnar epithelium and hyperplasia and there was more difficulty in making a diagnosis. The most noticeable change in the thyroid was an increase in the amount of colloid; is often so increased to give a histologic picture of colloid goiter. The hypertrophy and hyperplasia decreased. There was a marked increase in the cuboidal epithelium lining the acini. The extent and nature of the columnar epithelium provides an index of the degree of hypertrophy. Clinically, the basal metabolic rate and pulse fell to normal, with amelioration of the clinical signs and symptoms associated with a gain in weight.

The manifestations of Graves' disease, as emphasized by Plummer, occur in cycles. Each cycle is made up of four periods: First, development; second, maximum intensity; third, retrogression; and, fourth, remission. In some few cases the disease tends to pursue a chronic course without typical cycles or crises. The predominating symptoms are nervousness, loss of weight (although the appetite may be excessive), rapid action of the heart, tremor of the fingers, moist skin, sensation of warmth, fatigue upon slight exertion (particularly a quadriceps weakness noted while stepping on a street car or climbing stairs), and marked nervousness, more frequently of a petulant, irritable type, and often, in the very toxic cases, gastrointestinal crises with nausea, vomiting, and rise of temperature. A thrill and bruit are present and, in most cases, the arteries are palpable at the superior poles. The blood-pressure is generally normal or below, but with a pulse-pressure high, differing in both of these respects from the findings in adenoma with hyperthyroidism. The basal metabolic rate was increased to above plus-30 in ninety-five per cent of the cases in our clinic. The basal metabolic rate is often as high as plus-90 or more during the first and second stages of the crisis. The acute attacks of hyperthyroidism are usually followed by a remission of months, or perhaps years, in duration, only to be repeated in similar cycles which eventually result in degenerative changes of the heart and kidneys.

The adenoma with hyperthyroidism has more of a continuous symptomatology. There is not the tendency to go in waves, and presents the tremor and tachycardia just as in Graves' disease, and also the loss of weight and strength. Hyperplastic goiters seem to expand themselves upon the nervous and vascular systems in the brief time of one or two years. Nodular goiters are frequently present fifteen years before structural heart changes occur. Loss of weight, palpitation, tachycardia, fatigue and dyspnea are the first symptoms noticed by the patient in this type of goiter.

Graves' disease has an earlier onset (30 to 35) and reaches the maximum of its first severity at or about the end of the first year. One out of every five adenomatous goiters develop the toxic symptoms of hyperthyroidism. Judd found that even after the hyperthyroidism developed an average of two and one half years of symptoms elapsed before operation.

Allen Graham states: "Except for such differences as may be due to variations in intensity and duration of disease, we find it inconsistent without personal experience to accept a fundamental distinction between these two supposedly definite, and in some respects diametrically opposed, clinical entities. Adenoma and adenomatous changes are encountered in the thyroids of patients who have simple or endemic goiter, typical exophthalmic goiter, and that clinical condition referred to as toxic adenoma. I have found no anatomical, histological, chemical or pathological qualities in adenomata or adenomatous thyroid tissue such as would furnish a reliable basis for distinction between toxic and non-toxic goiter.

We have found colloid adenomata in hyperplastic thyroids and hyperplastic adenomata in colloid thyroids, and this may occur in either toxic or non-toxic goiter. In an extensive experience with pathologic conditions of the thyroid we have been unable to detect a single quality of adenomatous thyroid tissue that can be recognized as constantly present in toxic adenoma and constantly absent in exophthalmic goiter and simple endemic goiter. In toxic adenoma and simple endemic goiter, hypertrophic and hyperplastic adenomas may be surrounded by non-tumorous colloid thyroid tissue, and colloid adenomas by non-tumorous hypertrophic and hyperplastic thyroid tissue. From the standpoint of pathologic anatomy of the thyroid there appear to be insufficient grounds for a fundamental distinction between exophthalmic goiter and toxic adenoma as two different entities. We have no alternative but to regard exopthalmic goiter and toxic adenoma as clinical variations of a single morbid state."

Since there is no morphologic basis in the thyroid for thus splitting up Graves' disease, certain observers (particularly Plummer) have attempted to separate toxic adenoma from Graves' disease by means of the iodine reaction. His hypothesis assumes that iodine causes a drop in the metabolic rate in exophthalmic goiter because iodine completes an incomplete thyroxin, whereas iodine, according to him, does not lower the metabolic rate in case of so-called toxic adenoma. This hypothesis does not include all the facts. In the first instance a great many cases of Graves' disease with adenoma react with iodine with a temporary fall in metabolism, and, in the second instance, not all cases of Graves' disease without adenoma show a temporary fall in metabolism with iodine.

According to Marine, the phenomenon may have a simpler explanation than that advanced by Plummer, in that the fall in metabolism might be dependent upon the well-known involuting effect of iodine on hyperplasia. Iodine administration causes a rapid storage both of iodine and colloid in the follicles, and a rapid involution of the hyperplasia. The stretching and distention of the follicles with colloid causes partial occlusion of the perifollicular capillaries and lymphatics and a pressure retention which temporarily blocks excretion until the thyroid cells have accommodated themselves to the increased pressure and until the vascular capacity of the perifollicular capillaries is restored.

In support of this view are the following facts: (1) Iodine administration does not lower the increased metabolism caused by feeding desiccated thyroid or thyroxin. (2) Iodine does not materially change the metabolic rate in individuals with fully involuted thyroids. (3) Iodine, when given in small doses, does not cause a rapid storage of colloid or a rapid fall in heat production. (4) The fall in heat production corresponds in time and probably in degree with the morphologic manifestations of involution of the hyperplasia. (5) Desiccated thyroid does not cause a rapid fall in metabolism, even in cases with hyperplastic glands. (6) Cases with adenomatous hyperplasia which do not react to iodine with storage and involution do not show a lowering in metabolism. The same temporary drop in metabolism can be produced in animals, provided the gland is hyperplastic and large doses of iodine are used, and Martin has recently shown that a drop in heat production can also occur in simple goiter in man.

The explanation, therefore, of the temporary drop in heat production, seems to be dependent upon the long-known fact that the sudden administration of large amounts of iodine causes a rapid storage of colloid with distention of the follicles. This follicular distention in turn produces a pressure retention or inhibition of the secretory activity. After about two weeks, in cases of Graves' disease, however, the cells accustom themselves to this physical and chemical alteration and the metabolism rises again. The phenomenon erroneously known as "iodine thyroiditis" is an excellent clinical illustration of the effect of the sudden administration of iodine to large glands. The dangers that accompany the uncontrolled use of iodine in individuals with the anlage of Graves' disease are serious, and much harm has already resulted.

"For practical purposes, is there an essential difference between exophthalmic hyperthyroidism associated with a hyperplastic gland and hyperthyroidism associated with an adenoma of the thyroid, or with a colloid adenoma? For all practical purposes it is of no value to make any distinction at all. In the first place, I feel sure that nobody could determine the type of goiter present in a case of hyperthyroidism if he should cover the patient's eyes and not examine the thyroid; and, for that matter, the fact that exophthalmos is present is not sufficient evidence upon which to make a differential diagnosis. We have seen a large number of cases in which exophthalmos was associated with hyperthyroidism in the presence of an adenomatous goiter, even of a fœtal adenoma or a colloid adenoma. Such being the case, what is the value of making a distinction?" (Crile.)

The clinical and pathological evidences accumulated have forced us to believe there is no such thing as a toxic goiter, any more than there is such a thing as toxic fibroid or a tumor of any kind. We find that the symptoms associated with adenomatous or nodular goiter are just the same as those associated with Graves' disease. I have used Lugol's solution routinely in the preoperative preparations of our cases of hyperthyroidism, and the benefits from its use in cases in which an adenomatous goiter is present are just as striking as those in cases in which there is simply a hyperplasia of the gland.

Lately there has developed a general belief that so-called adenomatous goiter with hyperthyroidism (toxic adenoma) and exophthalmic goiter are two separate diseases. It has also been thought that iodine, although of benefit under certain conditions in exophthalmic goiter, is harmful to and contraindicated in cases of toxic adenoma. We felt that further evidence concerning the nature of toxic adenoma should be obtained by a trial of the effect of iodine in such cases.

Unselected cases of adenoma with hyperthyroidism, in which treatment with iodine had not been previously used, were studied. The differential diagnosis in these cases was based on the generally accepted criteria for the diagnosis of toxic adenoma, namely, a characteristic history, the presence of a nodular goiter, absence of exophthalmos and absence of thrill and bruit over the thyroid gland. The average age of the patients in this series was forty-eight years; the average duration of symptoms, two and a half years.

Fairly complete data was obtained in 100 patients. Eighty-five of these showed a favorable response to the iodine treatment, similar to that observed in unselected cases of exophthalmic goiter under similar conditions. In 15 cases there was little or no response. Particularly important is the fact that evidence of an unfavorable effect of the iodine was obtained only when the administration of iodine was discontinued or unduly prolonged. In such instances a relapse occurred, as in exophthalmic goiter under similar conditions.

Adenomas with hyperthyroidism, not treated with iodine, did not show the characteristic sudden drop in the metabolic rate and remission in clinical signs and symptoms seen in the patients treated with iodine.

The results obtained indicate that patients with adenoma with hyperthyroidism, previously treated with iodine, respond to its use in essentially the same way as patients with exophthalmic goiter. It is true that the basal metabolic rates do not show the same uniformity of drop following the administration of iodine, or, on the average, as marked a drop as in selected cases of Graves' disease. The cases of adenoma with hyperthyroidism reported here are an unselected group, and results compare favorably with those obtained in a similarly unselected group of patients with Graves' disease observed concurrently. It is also probable that, had an opportunity been given for further determinations following the use of iodine, many of the patients would have exhibited a further drop in the basal metabolism. The fact is that many had improved so remarkably that it seemed unwise to delay further the operative treatment.

Not only a similarity observed between adenoma with hyperthyroidism and Graves' disease, as far as the favorable response to iodine is concerned, but similarity in the lack of response was likewise noted. A certain proportion of the patients with adenoma with hyperthyroidism failed to respond to iodine, as do a certain number of patients with Graves' disease. Finally, the patients with adenoma with hyperthyroidism showed the same kind of relapse when iodine was discontinued and the same escape from its effect when the drug was long continued as was seen in Graves' disease. It would seem justifiable to conclude that, whatever difference exists in the patient's response to treatment with iodine in adenoma and in hyperplastic goiter, it is merely a quantitative and not a qualitative one. Apparently, no essential difference in the pathogenesis of these two types of thyrotoxicosis can be assumed on the basis of the patient's response to treatment with iodine.

Spontaneous improvement occurs in patients with both types. This fact may have some influence on the results obtained in both forms of the disease.

The reason for the quantitative difference in the response of patients with these two forms of the disease to treatment with iodine is undetermined. That it bears a relation to possible quantitative differences in the pathologic changes in the thyroid gland seems probable. The qualitative changes which undoubtedly occur may play no direct part in the response to treatment, except as they modify quantitatively the changes common to both forms of the disease. The reason for the lack of response to iodine in occasional cases of both forms of the diseases is not clear, and this problem, which may have a bearing on pathogenesis, awaits solution.

That patients with adenoma with hyperthyroidism have a relapse associated with the discontinuance of iodine or its prolonged use following initial improvement, is of great importance aside from the fact that in this way they behave like patients with hyperplastic goiter. It seems to explain completely the widespread misconception that iodine initiates toxicity in cases of adenomatous goiter that previously were not toxic. After initial and unrecognized improvement, patients in whom unrecognized and often mild hyperthyroidism has existed prior to the administration of iodine develop an exacerbation of symptoms associated with the discontinuance or prolonged use of the iodine. The same phenomenon occurs in cases of exophthalmic goiter, and the emphasis which has been focused on its occurrence in adenomatous goiter, together with mistaken interpretation that has been made, has served to increase, generally, the belief in a fundamental difference between these two types of diseases.

Marine has shown very clearly that there is no pathology in the thyroid gland which is specific for hyperthyroidism. Allen Graham, who, by photomicrographs of an ordinary colloid goiter, has shown every possible picture imaginable, hyperplasia, degeneration, pure colloid adenoma, etc. The histological picture of the thyroid before the administration of iodine is entirely different from what it is afterwards. The picture of the thyroid is different when the patient is in a state of excitation from what it is when quiescent.

MEDICAL MANAGEMENT OF GOITEROUS CONDITIONS *

By H. L. ROBERTSON, M.D.
Charleston, W. Va.

Apparently goiter has been observed and studied from a very early age by the Chinese, Greeks, and Romans. That keen observer, Paracelsus, made notes on the relations of simple goiter and myxedema, and through all the centuries following a feeling existed that iodine in some way played a part in the various thyropathies, as evidenced by their remedies of iodine-containing substances. There was an apprehension but no comprehension of what is now so clear to us of this generation.

It was not until a little over thirty years ago that Bauman, of Freiburg, demonstrated iodine in organic combination with thyroid tissue, and it was the year 1914 before Kendall isolated thyroxin. It is, however, to the recent studies of David Marine and his co-wokers that the various factors in thyroid disease have been assembled in logical sequence and crystallized into a comprehensive hypothesis.

The keynote of thyroid pathology, expressed by Marine, is that when the iodine content of the gland is decreased below 0.1% per gram of the dried gland tissue, definite morphologic changes take place in the form of a cycle. First, the gland passes from normal to hypertrophy, then to hyperplasia. From this point the hyperplastic organ may become atrophic through exhaustion or recover and pass into the colloid or resting stage, but never returns to normal. From the colloid stage the cycle may be repeated many times. So, in approaching the treatment of thyroid conditions in general, our main thought must be, How can the balance of iodine metabolism be best maintained, or if badly deranged, how restored?

Numerous factors share responsibility in the disturbance of the normal storage quota of iodine in the thyroid, chief of which is *iodine starvation.* It is well known that our iodine supply comes largely through our drinking-water, and surveys such as were made in 1919 by the Michigan State Department of Health show the constant relation of goiter statistics to the amount of iodine contained in water supplies. In goiterous districts the water is found to contain little or no iodine. Therefore, the necessity of furnishing iodine artificially in such localities is obvious, and the proof of this is beyond question in the remarkable decrease in goiterous conditions so frequently demonstrated in school children when iodine is faithfully and intelligently administered, the usual procedure being to give iodides in 10-milligram doses weekly or in two courses of two o rthree grams of potassium or sodium iodide twice yearly.

Factors in Iodine Dissipation.—These are largely the unusual demands made on the thyroid to furnish more thyroxin to the tissues of the body than the reserve storage can safely do; and in this age of strenuosities in all walks of life there is small wonder that unusual metabolism is necessary to maintain the strain and with a relative expenditure of iodine.

Dietetic Errors. Excesses in fat and protein increase the loss of iodine by increasing the metabolic rate.

Interference in iodine absorption and utilization through the effects of focal infections, intestinal flora, and various toxins, plays a large part in goiter problems—and it is in this condition that the won-

* Read before Central West Virginia Medical Societc. Webster Springs, July 18, 1928.

derful work of McCarrison probably fits into the puzzle. It will be remembered that his complete studies, published about ten years ago, demonstrated in animals, fish and human beings that endemic goiter could be induced and reduced at will by contamination of food and water. This is still an unproven hypothesis, but it seems reasonable to assume that toxins do have an inhibitory influence in iodine assimilation.

Nor must we allow ourselves to forget that a very large percentage of our thyroid disorders commence in utero, the mother starving the fœtus of its normal iodine supply by the inadequate supply in her own system.

Thus we see the cretin and the goiterous conditions of childhood that would never have existed had the normal iodine metabolism been maintained in early months of life. I am strongly in favor of routine administration of iodine to all pregnant women in goiterous sections, provided they are not harboring adenomata.

The treatment of goiter, then, as we understand it today (as a disease characterized by a series of morphological changes in the gland itself, due to starvation of iodine), must be one of prophylaxis. Prevent goiters instead of treating developed pathology.

The thyropathies are preventable diseases—just as much so as smallpox, malaria, typhoid, and many other diseases that in former days were treated instead of prevented. Let us hope that we may live to see a day when the mutilation of a thyroidectomy will be a thing of the past and the presence of a goiter in our community a reflection on our sanitary conditions.

When a goiterous patient presents himself, the first and most natural question that comes to our mind is, "What shall I tell him? What shall I prescribe?" The answer is, *nothing*, until several points are very clear in our own minds. First, into which of the two great divisions does the case belong—toxic or non-toxic? Second, what will likely be the results if the case is left untreated, as judged by the history we obtain and the physical findings?

So far as the non-toxic goiter is concerned, there are but two forms we need consider. The colloid goiter (soft, symmetrical, and rather large), and the nodular or adenomatous goiter (irregular in outline, hard in consistency). One can hardly help but identify them. Why, then, should we ever hesitate in identifying a non-toxic goiter? It is because these cases are frequently carrying other pathology that so closely resembles the toxic symptoms of hyperthyroidism that we are, indeed, faced with a problem that may well test the diagnostic ability of any of us. Is the rapid pulse a neurotic phenomena, a true organic heart lesion or a tubercular manifestation? Is the nervous condition resulting from pelvic pathology, a psychoneurosis or a vagotonia? No matter how closely the symptoms of an enlarged thyroid may resemble hyperthyroidism, do not accept them as such until proven by appropriate physical examination. Herein is the greatest source of error that comes to our notice—incomplete preliminary study.

The non-toxic goiter does not require treatment unless pressure symptoms are present. The colloid goiter usually disappears in the early twenties, regardless of treatment. It may, however, be greatly reduced by the administration of thyroxin or iodine.

The adenoma may remain in a quiescent stage from the cradle to the grave, but holds grave potentialities. Virtually all carcinomata of the gland (H) originate from it. They are very susceptible to activation by the prolonged use of iodine, and I have seen many cases develop serious toxic symptoms from the use of iodine salt. They are not amenable to medical treatment and should be either left alone or referred to the surgeon, but always we should tell these patients the possibilities.

Hyperthyroidism. — By this term we include Graves' disease and toxic adenoma. These present the well-known syndrome of tachycardia, loss of weight, the marked nervous symptoms, etc., but this likewise needs verification.

I must pause here to say a word with reference to the basal metabolic rate. It is to hyperthyroidism what the blood Wasserman and Kahn tests are to syphilis; what the blood sugar test is to diabetes; what the acid-fast bacillus is to tuberculosis. It is the logical chemical reaction that must result from thyroid activity; from the dormant gland of the cretin to the violent activity of the thyroid in Graves'. In other words, it is the one test we have which classifies our thyroid problems into the hyper- and hypo-groups. As diabetes does not exist without hyperglycemia, hyperthyroidism does not exist without increased metabolism. I have paid especial attention to this point, for the reason that the treatment of goiter, whether surgical or medical, depends entirely on the question of hyper- or hypothyroidism; and the only reliable gauge we have is in the basal metabolic rate.

A clear-cut case of toxic goiter is a surgical problem, and delay in bringing it to the operating table is not, in my opinion, good treatment. True, under

rest and supportive care the toxic symptoms may subside, but there will almost invariably be a recurrence—usually within three months—and we have with each recurrence a more strained myocardium and distorted nervous system. Iodine should be used in these cases as a surgical accessory—not as a remedial agent; and I prefer that the surgeon should control its administration as part of the preoperative technique. Rest in bed, helped, if necessary, by luminal or the bromides, and digitalis in commanding doses constitute the general therapy. The diet is forced to the limit of the patient's digestion, high in fats and carbohydates and rather low in proteins.

Hypothyroid Conditions.—In this are included the cretin, whose thyroid was starved to death before birth, and the myxedema, whose thyroid exhausted itself after birth. Then there is the borderline case without the edema, which is the convincing symptom of myxedema. I refer to the patients who are overweight, sleepy, tired mentally and physically, lazy, with low temperature, slow pulse, and low basal rate. All these are the cases which require thyroid and respond to it.

Some years ago Kendall postulated that thyroxin (the active principle of thyroid) is merely a catalytic agent for metabolic processes, increasing metabolism in the direction in which it was progressing. In youth we have an anabolic metabolism or growth process; in the adult, a catabolic metabolism or destructive process. So that, in the administration of thyroid to children and adults, we must expect practically opposite results.

In the *American Journal of Diseases of Children* (February, 1928) there is published an extensive study by Topper and Cohen, of New York, on the effects of thyroid administration to normal children. Briefly, the results were that, even when given in enormous doses, no appreciable effects were noted in pulse rate, nervous phenomena, or basal metabolic rate, but showed a remarkable effect on their growth. In those cases, however, where hypothyroidism was evident, the rise in pulse rate, temperature, and basal metabolic rate was constant.

From your own experience, recall how your patient, the dwarfed cretin, commenced to develop after the administration of thyroid, and in contrast how the adult myxedema lost her ungainly weight by the same therapy. Recall, also, the rapid loss of weight in adult patients who have taken overdoses of thyroid, or the victim of Graves' disease whose thyroid is delivering excess thyroxin. So, in the prescribing of thyroid, remember Kendall's words—that "it will increase the phase of metabolism which is dominant in the individual." I might add here that hyperthyroidism is exceedingly rare in children, but hypothyroidism is common.

Goiter in Pregnancy.—I regret that I am unable to furnish any personal observations in this phase of goiter, but the subject has been of great interest to me, so, after reviewing considerable literature, I am presenting figures and facts collected chiefly from some recent studies of Wayne A. Yoakum and published in the May edition of the *American Journal of Obstetrics and Gynecology*, and they agree in the main with other studies made in various sections of the country. Note the following statistics:

1. The incidence of goiter in 937 pregnant women was 60 per cent.
2. The incidence of goiter in infants of mothers who had received the iodine treatment was 60%.
3. The incidence of goiter in infants whose mothers did receive iodine treatment was 4 per cent.

These figures are too impressive to pass unnoticed in the prophylactic treatment of goiter. Furthermore, quoting from the same serial study, the so-called physiologic enlargement of the thyroid in pregnancy, which is in reality a true pathologic hyperplasia, may be entirely prevented by a proper administration of iodine. Different methods are suggested by different writers as to how iodine should be given, but all agree that it should be administered as early as possible, no matter what preparation is employed. Later than the seventh month, little or no beneficial results were noted in either mother or child.

Iodine salt, which contains 0.02% of iodine and will give the average individual ten milligrams of iodine weekly, has been advocated by Marine. But this, while beneficial, is not sufficient in itself to afford protection unless reinforced by additional iodine at intervals during gestation, usually 4 to 5 grains of sodium or potassium iodide daily for two weeks in the early months and the course repeated in the seventh lunar month. Most writers, however, are giving various iodides as best tolerated by the patient continuously throughout the entire term. True hyperthyroidism, or toxic goiter, is rather rare in pregnancy, and is best treated surgically, early. Let alone, premature labor, uterine hemorrhage and cardiac complications are frequent and serious.

Our studies in goiter prophylaxis is still in its early days, but let us make use of the knowledge we have, immature though it may be, work faithfully with our imperfect methods and learn by our mistakes.

PUERPERAL SEPTICEMIA *

Bacteremia, or Blood-Stream Infection

By T. E. VASS, M.D.
Bluefield, W. Va.

Bacteremia, as the name implies, means the presence of live, multiplying bacteria in the blood. It is an acute infectious disease, produced most commonly by the streptococcus pyogenes or the staphylococcus aureus. These cocci, with their attendant toxins, produce destructive changes in the cellular content of the blood, rapidly destroying the red cells and leucocytes, and cause degenerative tissue changes in the organs through which they pass, notably in the heart, liver and kidneys; these changes vary from cloudy swelling to degenerative destruction. Hemolytic strains cause the greatest devastation.

Besides streptococci and staphylococci, which are the most common invaders of the blood stream, the pneumococcus, the bacillus pyocyaneus, the gonococcus, the bacillus aërogenes capsulatus and numberless anærobic bacilli have been recovered from blood cultures.

Avenues of Entrance.—In post-abortal and puerperal infections, entrance into the blood stream is gained by two routes:

1. By lymphatic extension.
2. By direct invasion of the venous radicles and sinuses.

In blood-stream infections, whatever the avenue of entrance, the local pathological reaction is inconsiderable; consequently, the local symptomatology is insignificant, for, whether the bacteria enter the blood stream *vîa* the lymphatics or *vîa* the veins, their transit is so rapid and the tissue reaction caused so insignificant that appreciable local lesion must necessarily be absent. For the entrance of bacteria into the blood stream there must be a puerperal wound which is inoculated by bacteria. This may be at any point in the genital tract, the vulva, vagina, cervix, or in the placenta site; even a tear of the frenum may afford a portal of entry through which a virulent streptococcus may reach the blood. Here, as in other puerperal lesions, the activity of the process depends upon the virulence of the coccus and the local and general condition of the patient. Women who have been the subject of severe post-partum hemorrhage, or who have been toxic prior to their delivery, offer less resistance to coccal invasion than women whose ante-partum and intra-partum period has been less depleting. Exceptionally, the coëxistence of acute upper respiratory infection may be the portal of entry for bacteria reaching the blood.

In the lymphatic varieties of bacteremia, the autopsy findings are constant and typical:

1. The uterus shows an endometritis gangrenosa or metritis desiccans (Garrigues) in which the entire interior of the uterus is covered with a grayish-green sloughing, diphtheroid exudate and swarming with streptococci, while in the para-uterine tissues we find:
2. Parametritis and lymphangitis, the lymph vessels at the sides of the uterus being filled with purulent fluid which exudes from the cut surfaces, or the connective tissues may be infiltrated and edematous, with little blocking exudate, as the lymphangitis has extended so rapidly and so far, often along the posterior abdominal chain, as to justify the names which Virchow gave it—"erysipelas puerperalis malignum intranesia."
3. The lymphatic infection may have been directly to the peritoneum, in which case we find a pelvic peritonitis or a general peritonitis, with intestinal paresis, toxic absorption, and a terminal bacteremia.
4. If the patient lasts long enough, pleuritis, endocarditis or pericarditis are constant findings.
5. These special findings are always associated with the general pathology of acute infectious diseases, *i.e.*, swollen spleen, fatty degeneration, and cloudy swelling of the muscle fibres, especially of the heart, and cloudy swelling of the liver and kidneys.

Bacteria in immense numbers are found in the minute capillaries of these organs with embolic metastases in the lungs, heart, brain, or joints. In the vascular forms of bacteremia, the lymphatics are not involved at all, or, if so, to a decidedly less extent. The veins of the placental site are filled with large thrombi which are swarming with bacteria. The bacteria erode the endothetical lining of the vessel, fibrin is deposited on the eroded surface and an infected clot occludes the lumen. This process advances through the plexus of the broad ligament into the ovarian and iliac veins, even extending to the vena cava and renals. The rapid multiplication of the bacteria within the thrombus liquefies the clot and liberates bacteria into the blood stream, or, if the cocci are less virulent, the process becomes more chronic, the thrombi break down with a puriform softening, allowing droplets of pus or bits of thrombus to break loose in the blood stream and locate as

* Read before the Mercer County Medical Society at Bluefield, West Virginia, on April 11, 1929.

emboli, setting up multiple foci of suppuration in distant parts of the body with the symptoms of puerperal pyemia.

A period of incubation of from one to three days usually precedes the outbreak of severe symptoms. Ordinarily, however, the prodromal stage is characterized by the symptoms and signs of the local process in the cervix or uterus, parametrium or placental site, from which site the bacterial invasion of the blood has extended. Rarely, threatening prodromata, as high pulse and temperature, appear within a short time (a few hours after delivery) and the woman becomes seriously sick and may die within seventy-two hours.

In considering the pathology, we have shown how bacteria may enter the blood stream from a streptococcic throat, a local ulcer, through the lymphatics from an endometritis or parametritis, or by way of the placental site through infection of its thrombi. It is frequently impossible to determine when or how the germs enter the blood, as well as difficult to demonstrate them when they are there. Heretofore, repeated negative blood culture in women presenting the clinical picture of blood-stream infection was not uncommon, which made the diagnosis more baffling; but since our bacteriologists have been using anærobic methods, positive cultures of virulent streptococci have been recovered. Where the diagnosis of a purely local lesion has previously been made, the clinical syndrome indicative of serious bacteremic infection is unmistakable, though many times the diagnosis can not be confirmed by bacteriologic findings. The clinician must remember that only a small quantity of blood is cultured, and that when the colonies are so numerous that they can be found in every specimen the prognosis is surely fatal. On the other hand, we know that every blood-stream infection is not fatal, for the cellular elements of the blood, in many instances, are capable of taking care of a moderate blood infection, and the patient recovers.

Blood culture, when positive, confirms the diagnosis, but the clinical picture is so characteristic that the diagnosis can be made without its aid.

Blood invasion is usually ushered in by a severe chill, lasting from five to thirty minutes. During the chill the skin is pale, the face is pinched and the lips and finger-tips cyanotic. The temperature rapidly rises to 103–105° F., and the pulse rate, which has been slightly elevated during the prodromal stage, is at once increased to above 120; the pulse rate does not follow the temperature remission. At first, the pulse is full and bounding, but it soon becomes soft and compressible as the bacterial toxins in the blood weaken the heart muscle; so, with the rise in pulse rate, there is usually a fall in blood-pressure, particularly evident in bacteremia of hemolytic strain. Owing to the rapid destruction of the red blood corpuscles, the oxygen-carrying power of the blood is diminished and the patient exhibits marked pallor, the finger-tips are cyanotic, the respirations are hurried, and the woman looks profoundly sick. There is usually a leukopenia, for the white blood cells show no tendency to increase, owing to the intense and overwhelming toxemia.

The treatment of bacteremia hinges on our ability to increase the individual's resistance, for every infection is a struggle for existence between the bacterium and the leucocyte. Nature calls to her aid the polymorphonuclear cells, which, by their increase in number, attempt to break the bacterial attack—these are usually proportioned to the severity of the disease; a sudden drop in the polymorphonuclear cells indicates a loss in the reactive power of the patient. Hemolytic organisms rapidly destroy the cellular elements of the blood; it is therefore apparent that, in order to combat a blood-stream infection, one of two conditions must obtain: (1) either we must increase the resistance of the individual by fresh air, sunlight, food; small, repeated blood transfusions, and supportive stimulation, or (2) we must put into the circulation some chemical agent which will destroy the bacteria without impairing the function of the individual tissue. Clinically we must regard the blood as a tissue, with all of the characteristics of other tissues; hence, it is obvious that the introduction of bacteria and their toxins in the blood must result either in cell reaction or cell destruction.

The leucocyte is a bacterial enemy; hence, small, repeated blood transfusions offer a plausible treatment in blood infections, for transfusion would seem to serve the double purpose of lessening the secondary anemia and supplying normal, active leucocytes for temporary defense; besides, blood acts as a food, raises blood-pressure, and helps to restore the functional activity of the organs which bear the brunt of the defense. Transfusions should be done early, and, combined with an equal amount of Ringer's solution to which acid sodium phosphate has been added, in the proportion of 1 gram to the 1,000 c.c. By this addition the alkalinity of the blood is increased and maintained for sufficient time to allow the natural body fluids to carry on their battle with the toxins. Transfusion should be preceded by a hypodermic

of 1/6 of a grain of morphia and 1/200 of a grain of scopolamin. It should be done during the remission in temperature, and not only should the donor and recipient be grouped, but their blood should be matched and rematched, for reaction is serious in an already weakened patient.

Of the remedies which have been introduced into the blood stream to destroy bacteria, mercurochrome, acriflavine, and gentian violet have had the most extensive use.

To test the efficiency of any chemical which may be introduced into the blood we must first determine certain facts: (*a*) the effect of the drug on the red and white cells; (*b*) its effect on the fragility of the red cells; (*c*) its effect on the coagulation and bleeding time of the blood; and (*d*) its effect on the viability and the phagocytic power of the leucocyte.

Does the intravenous injection of acriflavin, gentian violet or mercurochrome in concentration compatible with life give to the whole blood any bactericidal or bacterial inhibiting property which is not present in the normal blood? Clinically, no.

What effect have these drugs when given intravenously on the several body tissues, as the kidneys, liver, lungs, nervous system, and heart muscle? Eggerth has proved that acriflavin has a selective action on certain body tissues which causes it to be taken up by some of these tissues in such concentration as to injure and destroy them. The kidneys show degeneration of the convoluted tubules, while the conducting tubes contain casts and detritus; the liver shows degeneration about the central vein, and the liver cells are shrunken and contain large quantities of fat. With these facts proven, it is unlikely that acriflavin or mercurochrome can cause other than a transitory leucocytosis, for it is not conceivable that an organism with organs which have already sustained serious parenchymatous changes can function properly in the presence of added chemical irritations.

Does intravenous injection of these dyes reach such a concentration in certain tissues as to have a bactericidal or bacterial inhibiting effect on the organisms in these tissues? Regarding mercurochrome, it may be said with positiveness that the experience clinically has been confirmed with experimental evidence showing the hemolytic organisms exposed for three hours to concentrations of 1/10,000 which represents the maximum of concentration of this dye obtainable in the circulation, has no bactericidal action, and that, when employed in the strength of 7.5 mg. per kilogram of body weight, diarrhea and urinary suppression with prostration have resulted.

Foreign Proteins: Intramuscular injections of human blood in quantities of 20 to 40 c.c. have resulted in increasing the leukocytosis, as also have other foreign proteins such as milk and other casein preparations. The intramuscular injection of foreign proteins has been used in the treatment of infections for many years, but has only recently become popular in this country through the writings of Gellhorn. We have been using milk since 1922 with varying success. Study of our results lead us to the conclusion that, in gonorrheal and mixed infections with exudates, milk, blood and other protein agents are of decided value, but in blood-stream infections little or nothing can be expected from their use.

Anti-Streptococcus Serum: Marmorèk, in 1895, discovered an anti-streptococcic serum and raised the hopes of all obstetricians who were unfortunate enough to see cases of sepsis. Experience with sera has not been satisfying. They favor phagocytosis and raise the opsonic index of the patient. Their use should be begun early and repeated daily in 50 c.c. dosage. The practice has been to use sera as a prophylactic after difficult dry labors when intrauterine manipulation has been necessary.

Vaccines: Vaccines have a definite place in the treatment of sepsis. They may be employed in pyelitis, thrombophlebitis and subacute mixed gonorrheal infections. In the former, autogenous vaccines made from the cultured urine aids materially in clearing up the bacteruria. In thrombophlebitis a vaccine seems to increase the leucocytic reaction, and in gonorrheal infections great benefit has been seen. The initial dosage should be from 50,000,000 to 100,000,000 every second day, gradually increasing 10,000,000–20,000,000 at each injection, depending on the amount of reactions.

Examination of Spine

B. C. Cushway and R. J. Maier, Chicago (*Journal A. M. A.*, March 2, 1929), in making a routine examination of the spine for industrial employees, found that anomalies of the vetebræ are very common and do not necessarily cause painful backs. Röntgenologic study of the vertebral column should be made in all employees in industries in which injury to the spine is common. This form of examination will prevent the employment of those unfit for certani types of labor. Just compensation to the injured will be certain, as this form of examination will definitely fix the date of injury within the term of employment.

TUBERCULOSIS IN CHILDREN *

By G. F. EVANS, M.D.
West Virginia State Tuberculosis Sanitarium
Hopemont, W. Va.

Tuberculosis in children presents an entirely different clinical picture from the adult type, but difficulties in diagnosis and treatment are common to both.

The tuberculin test shows that, at the age of 15, between 50 and 70 per cent of children are infected. Many authors state that at puberty infection is universal.

Is adult tuberculosis in the nature of a superinfection from without or a reinfection from within? This problem has occupied the attention of the best phthisiologists, and the evidence seems to be in favor of the latter hypothesis. If we accept this view, then it seems that we should be especially concerned with the recognition and care of these childhood infections. If the child's life can be so arranged that these infections may become thoroughly encapsulated and walled off, then it seems reasonable to believe that the incidence of disease in the adult will be decidedly decreased. Krause has made the statement that a patient's resistance is no greater than the shell of his tubercle. For an adequate conception of this problem, we must understand the cycle of events following the primary infection.

The bacillus tubercle may gain admission to the body in a variety of ways. It seems probable that, in a majority of instances, the primary focus is within the parenchymal lung tissue. Whether the bacillus reaches this site by way of the lymphatics, bronchi, or blood vessels is not clear. This primary localization seems particularly true of the human type of the bacillus. All the argument between American and European investigators hinges on the type of bacillus involved. The higher incidence of bovine tuberculosis and less stringent pure-milk laws probably account for the higher percentage of intestinal tuberculosis in Europe.

Opie[1] states that in autopsies performed in France on young British soldiers 18 of 66 showed mesenteric lesions; in these 18, pulmonary tuberculosis was scant or absent. But in 50 autopsies in St. Louis no evidence of disease was found in the mesenteric lymph nodes, although it was invariably present in the lungs. He cites the greater frequency of tuberculosis in cattle in England as a probable explanation.

The location of the primary focus is usually within the mid-lung area, the lower portion of upper lobes or upper part of lower lobes. The extension of the primary focus is always by way of the lymphatics, so the first glands to become involved will be those of the tracheo-bronchial group, and it is the recognition of this glandular involvement and its proper supervision that especially concerns us.

Infection during the first year of life always means active disease and is usually fatal. It usually progresses to miliary infection and terminal meningitis. Meningitis is the commonest cause of death in infants with tuberculosis under five years of age. However, there are many cases on record to show recovery of infants from massive infection. Kohn[2] reports an infant 12 weeks old with a positive Pirquet reaction. This infant must have been infected at least two weeks prior to the test. Röntgenological examination showed a small primary focus with marked lymphatic enlargement. Bronchostenosis and signs of respiratory obstruction were present. This child developed normally and was in excellent health five years later.

There are two peaks of tuberculosis mortality during childhood. The rate is high during the first year, gradually declines until the fifth year and maintains this level until the thirteenth or fourteenth years. Here a second rise occurs; this second rise is due to disease of the adult type.

Occasionally we see an infant with an adult type of disease. When this occurs the condition is easily recognized. The prognosis is always poor. A positive sputum is particularly significant of a fatal outcome.

We should be especially concerned with the recognition of the primary focus and the subsequent infection of adjacent glands. This condition has received many names, but has been officially termed *hilum tuberculosis* by the Diagnostic Committee of the National Tuberculosis Association. It has been described by that body as a type of disease occurring in children between the ages of three and thirteen, but it may occur in adults, especially in non-tuberculized races. It is a distinctive type, in that the lesions are usually found in the lymph nodes about the trachea, the main bronchi, and their larger subdivisions. It may involve the lymphoid branches which are in close contact with the branches of the bronchial tree and later produce lesions within the adjacent tissue. However, it must be recognized that hilum and pulmonary tuberculosis may exist separately or in combination.

* Read before the Harrison County Medical Society at Clarksburg, West Virginia, on March 7, 1929.

The most important feature in the diagnosis of hilum tuberculosis is the history of exposure. This is to be searched for in every instance. Even the most casual contact should be placed under surveillance. The extent and severity of disease usually varies with the massiveness and frequency of exposure.

There are few symptoms referrable to the respiratory tract that will assist in the diagnosis. Pleurisy is the most important, but occurs infrequently. The most common symptom is fatigue. Chadwick[3] states: "A chronically tired child, without apparent cause, is one to be suspected of a hidden focus of tuberculosis." Failure to gain weight, nervous instability, and quietness in a previously healthy and active child should always be investigated. Temperature over 99.6° is rare.

Malnutrition is not a prominent symptom, and when it does occur it is usually the result and not the precursor of tuberculosis. Chadwick,[4] after examination of over 25,000 school children, reached the following conclusion: "We have no evidence to prove that an undernourished child infected with bacillus tubercle is any more certain to develop tuberculosis than one that is well nourished. It does seem logical, however, to try to raise the standard of health of such children as much as possible by better care and closer supervision." Symptoms should be regarded only as an index of activity of a hitherto latent lesion.

There are no signs to be elicited by examination which will be of great assistance. Râles are rare, even in far advanced disease. Diminished resonance in the interscapular spaces is difficult to demonstrate and of little value. D'Espine's sign has been the subject of much controversy. Physicians can not even agree as to its exact definition. I do not believe that any physician is qualified, by examination alone, to state whether a child has or has not tuberculosis.

The value of röntgenoograms in diagnosis of hilum tuberculosis can not be overestimated. It is generally agreed that there should be no positive conclusion without confirmation from this source. Calcium deposits in the neighborhood of a primary focus are the most valuable diagnostic sign. This sign is of little value in very young children, because calcium is not deposited until many months after infection has occurred. Ghon[5] was unable to find any evidence of calcification in children less than three years of age.

It has hitherto been debatable whether glandular enlargement from an acute infection would cast a shadow. McPhedran[6] has proved that intrapulmonary glands must contain calcium to be recorded by the röntgen ray. The whole situation has been summed up by Stoloff[7] from an experience embracing 6,000 fluoroscopic examinations: (1) a primary focus must be healed to be recognized; (2) an enlarged hilus shall be presumed to be tuberculous when it is sharp in outline, projects into the lung fields and shows calcification, or when pleuritic involvement or primary focus is recognized in the area which it drains.

Widening of the mediastinum, studding, thickened markings, etc., have in themselves no significance whatever.

The röntgenologist should not attempt, nor be expected, to reach any interpretation without the history and tuberculin record of the child.

The tuberculin test is a simple procedure which can be done in the office and should be employed routinely when the diagnosis is in doubt. The intradermal test is the best, commencing with 1/10 mg., and, if negative, repeating with 1 mg.

The diagnosis should be made only after an investigation as complete as the facilities will permit. The salient features of this are history of exposure, röntgenograms, and tuberculin test. A positive diagnosis of hilum tuberculosis should not be considered until all foci of infection within nose, throat and sinuses are eradicated. When all other possibilities are exhausted, a presumptive diagnosis of hilum tuberculosis should be made, even in the face of negative findings.

After detailed explanation by the physician, the responsibiilty must be placed squarely upon the parents, and the outcome will depend largely on their intelligence, coöperation, and dependence. If they will not assist in the program, then the child should be sent to a sanatorium or preventorium. Discipline is the first lesson to be grasped by the tuberculous patient, for, without obedience and subjection to the physician's orders, no degree of cure can be anticipated.

When the disease involves the parenchymal lung tissue, the only therapy permissible is *rest*, *fresh air*, and *diet*. All these should be administered as rigidly as possible, because the outlook is grave and fatal results usually ensue, despite our most vigorous efforts. If the disease is strictly limited to the hilæ our treatment may be modified. Most patients of this order will respond to a régime calculated to correct any existing faulty hygiene.

Home conditions must be investigated and all possible sources of infection removed. The program

detailed by Dr. H. D. Chadwick, of the Massachusetts Tuberculosis Organization, will be found most satisfactory. He advises that the child be put to bed when the temperature is over 99.6°, to remain there until it becomes normal. When all symptoms have subsided and gain in weight has recurred, and temperature has been normal for one month, the child may be allowed one half day at school. Rest must be enforced for one half hour before and after meals; also an early bed hour and a liberal diet. Temperature records should be kept faithfully and any rise in temperature is to be followed by a further stay in bed. Athletics or any form of unnecessary exercise should not be allowed. If improvement is continuous after six months, the child may be allowed to attend all school sessions, but must remain under strict medical supervision for years.

Of the many useful adjuncts to treatment, probably the most important is heliotherapy. This branch of therapy is very imperfectly understood, but there is no question of its efficiency in the treatment of hilum tuberculosis. Exposure to the sun and, when possible, ultra-violet irradiation, in properly graduated doses, will bring beneficial results.

All possible sources of infection or deformity should be removed, particularly those of the respiratory tract. Any infection in this region predisposes to or aggravates hilum tuberculosis.

Prevention.—The vaccine inoculation of Calmette has attracted widespread attention during the past few years. The vaccine is an emulsion of bovine tubercle bacillus which are rendered avirulent by 230 passages on bovine bile medium. The vaccine is popularly termed *Bacillus of Calmette–Geurin.* It is administered perorally in three doses during the first week of life.

Under Calmette's guidance, brilliant results have been reported. Recently, however, his statistical reports have been attacked by such capable authorities as Greenwood[8] and Rosenfeld,[9] each of whom find many errors which tend to make the results misleading.

The lack of enthusiasm for this method of treatment in the United States is due, in large part, to the ever-present doubt whether this avirulent organism may not regain some portion of its virulence within the human body. Nobel,[10] after an experimental study, interprets his results to show that immunization affords no protection against infection, but that it inhibits the progress of infection and prolongs life. Kraus[11] cites the fact that Bacillus of Calmette–Guerin is capable of producing characteristic lesions, as proof that it possesses a certain degree of virulence. Taillens[12] protests against the assertion that Bacillus of Calmette–Guerin is without danger in children. He reports the case of an infant which died at the age of six months from tuberculous meningitis. This infant had received Bacillus of Calmette–Guerin from a specialist; either it failed to protect or it was the cause of the tuberculosis. Petroff,[13] from a recent study, concludes that Bacillus of Calmette–Guerin in undissociated form is not very virulent for guinea-pigs and rabbits. Progressive tuberculosis occurs rarely, but it does occur. He believes that the bacillus, in prophylactic immunization, may be a dangerous procedure at present.

We believe that much more experimental data, to show this procedure is absolutely without risk, should be secured before the method is employed in an extensive manner.

The establishment of separate schools for tuberculous children has found favor in many of the larger cities. In this manner the education of the child is not interrupted, and the medical supervision usually rapidly subdues any active focus which may exist. Summer camps, where malnourished and pretuberculous children may congregate for four to eight weeks, are very helpful. Even in this short time, discipline, correct living and sanitation may be so impressed upon these children that they will conduct themselves throughout the year in such a manner that activation of a latent focus would be improbable.

The fundamental principle in the crusade against tuberculosis has been the education of the public, and the rapid fall in death rate may in large part be accredited to the propaganda of the various professional and lay anti-tuberculosis organizations.

The late Dr. Herman Biggs, health officer of New York City, made the statement: "Public health is purchasable; within natural limitations, a community can determine its own death-rate." This quotation is especially applicable to tuberculosis. Any community making a strong, organized effort against tuberculosis will find very material satisfaction in the drop of mortality rate. The number of deaths from tuberculosis in any community varies directly with the organization and financial condition of the various county health units. This is well exemplified here in Clarksburg, where the rate from pulmonary tuberculosis is approximately two-thirds of that for the state at large.

Summary.—The recognition and proper treatment of hilum tuberculosis will decidedly mitigate possibilities of adult disease.

History of exposure, tuberculin test and stereograms are the most important items in reaching a diagnosis.

Hilum tuberculosis will usually respond to a moderate change in the individual's mode of acting and living.

Conclusions.—It is our opinion that active childhood tuberculosis rarely develops in children whose lives are regulated by proper hygienic measures, who are not exposed to tuberculosis infection except in an occasional and casual manner, and who are free of other chronic infections and stigmata.

The intradermal tuberculin test should be used as a routine medical procedure among school children, and all reactors should have a careful investigation of their home surroundings and physical condition. They should be kept under close observation as long as they remain at school.

REFERENCES

1. Opie: *Amer. Rev. of Tub.*, September, 1922.
2. Kohn: *Amer. Rev. of Tub.*, June, 1928.
3. Chadwick: *Boston Med. & Surg. Jour.*, August, 1928.
4. Chadwick: *Amer. Med. Jour.*, August, 1927.
5. Ghon: *Virchow's Arch. of Path., etc.*, 254-3, 1925.
6. McPhedran: *Amer. Jour. Med. Sc.*, February, 1927.
7. Stoloff: *Jour. of Dis. of Child.*, March, 1927.
8. Greenwood: *Brit. Med. Jour.*, 793-795, May, 1928.
9. Rosenfeld: *Wein Klin. Wchnschr.*, June, 1928.
10. Nobel: *Wim. Klin. Wchnschr.*, June, 1928.
11. Kraus: *Wein. Klin. Wchnschr.*, June, 1928.
12. Taillens: *Schweiz. Med. Wchnschr.*, April, 1928.
13. Petroff: Branch, Steinkin, Jr., *Amer. Rev. Tub.*, January, 1929.

Medical Prescriptions of Alcohol

During 1928, 68,951 physicians used prescription books, as contrasted with 48,097 in 1927. The number of licensed physicians in those states which permit the use of liquor for medicinal purposes is 116,756, so that a little more than one-half the total number of physicians permitted to prescribe alcoholic liquors avail themselves of the opportunity. Slightly more than 10 per cent of all the physicians who might prescribe alcoholic liquors used the total number of prescriptions afforded them by the government. The total number of prescriptions issued during the year increased from more than eight million in 1922 to approximately thirteen and a half millions in 1925, and then decreased to less than twelve millions in 1927. At the close of the year the number of outstanding permits of this kind had increased to 101,052.—*Journal A. M. A.*, March 30, 1929.

CASE REPORTS

CANCER OF THE LIVER, WITH DIFFERENTIAL DIAGNOSIS *

By E. S. DUPUY, M.D.
Beckley, W. Va.

The patient, a white male, fifty-six, single, was born in Ohio and lived there about half of his life; also lived in Virginia one year, Indiana two years, Louisiana one year, Florida two years, and West Virginia one year; in fact, he has been a rambler. He graduated from high school at eighteen, then took two years of college work, after which he spent three years in a bank, serving as a clerk. At age twenty-three he took up the occupation of a hot mill tin-plate worker. Says he has never handled dogs or other animals.

Family history: Father died at seventy; mother died when he was eight years of age; does not know causes of their deaths. Has one brother living, sixty-six, and in poor health; no sisters. Nothing known about uncles and aunts.

Clinical history: In boyhood, had a slight rash lasting a few days; cause not known. Had gonorrhea at twenty-two. At twenty-three developed insanity and was confined in an institution for thirteen months. At thirty-five developed nervous prostration, which lasted two months. At thirty-eight, developed insanity a second time and was confined in two institutions for fourteen months. Contracted malaria in Virginia in 1914; sick two weeks, and does not remember the form he had. Denies alcohol and tobacco. Says he never had syphilis. Has suffered from hemorrhoids. Was treated in Johns Hopkins Hospital in 1903 for prostatic trouble. Suffered from an abscess in the rectum about five years ago.

Present condition: Patient very weak, scarcely able to walk a mile slowly. Appetite capricious. Suffers from indigestion, gas on stomach and bowels. Complains of burning and sour stomach, also gnawing and gone feeling; unable to sleep. At this time stools are about normal. Have been watery in the past. Can never remember stools being white and pasty. At times has been constipated; at other times has had diarrhea. Complains of a dull pain in the heart region; also suffers from varicocele.

Physical findings: He is six feet tall and weighs 156 pounds. The average weight should be 183 pounds; minimum 143 pounds, maximum 220

* Read before the Mercer County Medical Society at Princeton, West Virginia, on September 27, 1928.

pounds. The patient has a slight cachexia. Several wens are found on the head. On the day of examination his temperature was 98° F., pulse 95 per minute and intermittent. Blood-pressure 118 systolic, 80 diastolic. Urine, straw color; clear, acid reaction, sp. gr. 1010, albumen 1+, sugar negative, a few pus and blood cells, and an occasional granular cast. Heart enlarged to left and diastolic murmur heard. Lungs negative; teeth bad; tonsils appear to be healthy; reflexes all normal; no Romberg's sign present; sight gone in right eye; epitrochlear glands not palpable; liver much enlarged; Wasserman blood and spinal fluid negative; spleen not palpable; examination of prostate, sphincter muscles very much relaxed; rectum otherwise negative. Prostate very much enlarged, smooth in outline, no tenderness to touch, no nodules or indication of pus pockets. Blood picture: red cells 4,550,000 per c. mm., white cells 8,300 per c. mm., lymphocytes 20, large mononuclear 2, polymorphonuclear neutrophiles 76, eosinophiles none, basophiles 2, hemoglobin 71, color index 0.8. Examination of stool, negative.

Clinical diagnosis: Cancer of the liver. Metastatic melanosarcoma. Malignant melanoma. Origin most likely from skin or choroid.

During the last three months of his illness the patient was mentally deranged and eventually went into a coma which lasted three days, ending in death.

Causes.—There are several causes of enlargement of the liver:

Active hyperemia is caused from overeating of rich food, alcoholism, acute infections like malaria or typhoid, or the sudden arrest of habitual bleeding from hemorrhoids.

Passive congestion is caused from any condition which produces an obstruction to the flow of blood through the right heart, especially chronic valvular disease, less commonly pulmonary emphysema or cirrhosis. This form is called "nutmeg" liver. In this condition the liver may extend down to the navel. If due to tricuspid incompetence, the whole organ may pulsate. Slight jaundice is not uncommon, with clay-colored stools and bile-tinged, scanty urine of high specific gravity. There may be an enlarged spleen; occasionally hematemesis, and, in advanced cases, ascites. Gastrointestinal disturbances are usually present.

Abscess of the liver is caused from infection through the portal vein, due variously to dysenteric, typhoid, or gastric ulcer, appendicitis, amebic dysentery, diseases of the rectum or neck of the bladder, pelvic abscess or abscess of the spleen. It may be due to gallstones or parasites-distoma, echinococcus or roundworms. There will be slight jaundice, fever reach 103 to 105 degrees Fahrenheit; chills and sweats. A dull aching is complained of over the liver, also pain in the right shoulder. Gastric disturbance is complained of, with alternating constipation and diarrhea. Ascites is rare. There is a progressive loss of flesh and strength. The liver is enlarged and tender, and, if there is a single abscess of considerable size in the right lobe, will be enlarged upward as high as the fifth rib in the mid-axillary line and to the right. This condition is different from all other swellings of the liver. It may project below the costal margin anteriorly as much as four inches. Leucocytosis is always present. Enlargement of the liver from malaria can be diagnosed by finding the plasmodium in the blood, and by applying the therapeutic test of quinine. The spleen is enlarged in malaria and not in abscess of the liver. You will get a history of dysentery or other cause of intestinal ulceration in abscess of the liver.

In intermittent fever you get a history of previous attacks; the jaundice is more intense and usually deepens after each paroxysm of chill, fever and sweat; the duration is much longer, with entire absence of fever between the paroxysms; there is no serious impairment of the general health. In typhoid fever the diarrhea, delirium, rapid pulse, the presence of rose spots and the Widal test will make the diagnosis. Hepatic abscess may complicate typhoid fever.

A large, right-side empyema, by which the liver is pushed down and apparently enlarged, may so closely simulate liver abscess that a differential diagnosis is extremely difficult. The upper line of flatness in empyema lies at a higher point than in abscess and may change position with movement; bulging of the affected side is common; the cough and dyspnea are more marked; there is a history of previous tuberculous disease, or a pneumonia or serous pleurisy; and the earliest symptoms are pulmonary rather than intestinal or abdominal.

Two forms of cirrhosis of the liver are described. The atrophic form, or "hobnail," occurs mainly in men about forty years of age or over, and in the majority of cases is caused from alcohol. It is by no means confined to men, many cases having been reported in women. Early symptoms are those of a gastric catarrh, anorexia, furred tongue, nausea, and vomiting. Later epistaxis, hematemesis, or bleeding from dilated veins in the esophagus, intestinal hemorrhage, or bleeding hemorrhoids. Ascites, often

becoming enormous, usually ensues, with subsequent great edema of the legs and genitals. Jaundice, if present at all, is slight. The urine is scanty and high-colored, of high specific gravity, loaded with urates, and often contains bile pigment. Fever is uncommon, but may be present (100° F. to 102° F.) during advanced stages. The face, often ruddy at first, becomes pallid, sallow and pinched. There is usually progressive loss of flesh. The veins of the abdomen stand out. The liver is at first somewhat enlarged, but later becomes smaller. The spleen is usually enlarged and palpable. Cerebral symptoms may develop at any time.

Hypertrophic cirrhosis of Hanot occurs mainly in men under forty years of age (occasionally in children), and there is not usually an alcoholic history. The cause of the disease is practically unknown. There is jaundice, usually slight. The liver is uniformly increased in size and may extend down to the level of the umbilicus; its edge is smooth, firm, hard, and its surface is smooth. The spleen is enlarged, hard, and readily palpable. This symptom is more marked in children. There are attacks of pain in the region of the liver, slight or severe, sometimes accompanied by nausea and vomiting and followed by an increase of the jaundice; but the gallbladder is not swollen. The urine contains bile pigment, but the stool remains dark. There may be slight fever, and a marked leucocytosis is not uncommon. At any time during the course of the disease, delirium and high fever with a grave form of jaundice may develop. In contradistinction to atrophic cirrhosis, ascites and dilated abdominal veins do not occur. Two varieties of fatty liver are described.

Fatty infiltration may be present as a part of a general obesity; or, on the other hand, because of interference with oxidation, may supervene in the course of chronic wasting diseases like pulmonary tuberculosis, carcinoma, grave anemia, malarial cachexia, or syphilis. A fatty cirrhotic liver may be found as the result of chronic alcoholism. There is no jaundice. The stools are pale. Ascites is not present. The liver may extend down to the umbilicus, is smooth and painless. The spleen is not enlarged.

Fatty degeneration may be due to alcoholism, carcinoma, phthisis, chronic dysentery, profound anemia, acute specific infections, poisoning by phosphorus, arsenic or chloroform.

Amyloid liver occurs most frequently as a result of chronic suppuration in tuberculous disease of the bones, especially of the hip joint or vertebræ; next most commonly is due to syphilis, particularly syphilitic ulceration of the rectum and diseases of the bones. The liver is uniformly and greatly enlarged, smooth, solid, firm, and is not tender. The spleen also is enlarged. Jaundice is absent; the stools may be light-colored but contain bile, and there is no ascites or other evidence of portal obstruction. As an amyloid kidney usually coexists, the urine often contains serum albumen and also serum globulin, with abundant casts.

Carcinoma of the liver occurs most commonly in men, seldom under forty years of age; very rarely in children. It is next in frequency to carcinoma of the stomach and uterus; usually secondary, mainly to primary disease in the portal territory, especially of the stomach and rectum, or to mammary carcinoma. Progressive emaciation and loss of strength may be the earliest symptoms. There are, usually, anorexia, nausea, and vomiting. Jaundice is present in fifty per cent of the cases, and may be slight or marked. Pain is usually present; ascites is not common; the spleen is seldom enlarged. Moderate fever (100° F. to 102° F.) is not infrequent during the later stages; rarely, chills and high intermittent fever may cocur. A marked cachexia with anemic edema of the feet and legs almost invariably appears toward the end of the disease; and, at the same period, toxic symptoms, headache, delirium, stupor or coma may supervene. Physical examination shows enlargement of the superficial veins and distention of the upper portion of the abdomen. The liver is nodular, may be enlarged below the navel, and may move with respiration. Carcinoma of the gallbladder may be primary, and, if so, is associated with gallstones in ninety per cent of all cases; or secondary to diseases in the liver or neighboring organs. It usually starts in the fundus of the gallbladder. The symptoms are chronic jaundice, occurring in about seventy per cent of the cases; persistent pain and tenderness, severe at times; occasionally vomiting, hematemesis, ascites, and fever. A tumor mass can be felt in two thirds of the cases; cachexia is present. Perihepatitis is a chronic inflammation, with great thickening of Glisson's capsule; it is easily mistaken for atrophic cirrhosis. It is accompanied by interstitial nephritis. Jaundice is not present; ascites is present. The liver is palpable.

Acute yellow atrophy is a rare condition attended by a rapid necrosis of the liver cells. It occurs with the greatest frequency in pregnant women between twenty and thirty years of age. The condition is almost exactly that which is produced by phosphorus

poisoning. The cardinal symptoms are jaundice, vomiting, delirium, hemorrhages, with leucin and tyrosin in the urine, and atrophy of the liver. There is no bile in the clay-colored stools; the urine is bile-stained.

In syphilis of the liver, gummata form in the substance of the organ, and, as a result of their absorption, the liver becomes deeply lobulated. It is enlarged and irregular. The general health is not greatly impaired. You may have symptoms of hepatic cirrhosis (ascites, slight jaundice, and digestive disturbance). A chronic fibrous inflammation, affecting mainly Glisson's sapsule, may coexist, causing a perihepatitis.

The larvæ of two of the cestodes may infest the solid organ, producing affections that may be serious—the tenia solium and the tenia echinococcus. The former is the pork measle worm; the latter is found in the dog. Small and few cysts in the liver cause little disturbance. If very large, a distinct, fluctuating tumor mass may be felt. If suppuration of the cyst occurs, pyemic symptoms rapidly follow, *i.ee.*, jaundice, rigors, sweating; rapid, feeble pulse, and loss of weight. The liver is irregularly enlarged. Jaundice is a common symptom. Loss of flesh and, later in the disease, hemorrhages are marked symptoms.

ABSTRACTS

Some Practical Points in Emergency Surgery

Below is a brief résumé of some of the more important points in emergency surgery with practical application of the same:

Severe Contusions Without Abrasions.—The part should be cleansed with the same diligence as would be applied to an open wound.

Routine examination of the skin with a magnifying glass will often disclose breaks in continuity that may later be responsible for serious or unpleasant results. When muscle tissue is involved or a nerve is injured, the part should be placed at rest—splinting, adhesives, straps, or even a cast, as conditions demand. Always, in applying a bandage to an injured part, allowance should be made for edema. Frequently the subsequent pain is due not to the injury but to the mode of after-care.

Wounds with Abrasions and Severe Lacerations.—All patients who have been injured, and the wound contaminated, should receive tetanus antitoxin, or at least the patient should be given the privilege of refusing this treatment. In that event it is not a bad idea to have him sign a statement of refusal.

In the treatment of open wounds we would recommend a definite routine, to be followed even though it is necessary to give a general anesthetic to carry it out. Below is one we have found most satisfactory:

. Bleeding is controlled by tourniquet or a hemostat.

2. With soap, warm water, and a sterile hand-brush, the part is thoroughly but gently scrubbed.

3. Cleanse with benzine or pure gasoline. Care should be taken not to use any of the various so-called high-test gasolines, as they contain lead and other poisonous chemicals.

4. Shave the part, including a wide area of surrounding skin, and trim up the raw edges and traumatized tissue within the wound.

5. Wash the wound with ether.

6. Apply an antiseptic. If iodine is used, wash the part afterward with alcohol, thus minimizing the possibility of an iodine burn or reaction. Scott's solution—alcohol, acetone, and mercurochrome—makes an excellent, safe, antiseptic solution.

The wound is now clean and ready for repair. For deep suturing, we recommend a small-sized, twenty-day catgut, chromicised, in preference to most other suturing material, as it will be digested and not act as a foreign body later, should infection occur. The skin should be brought into apposition with either silkworm or horse hair. A porous material, such as linen thread or silk thread, should never be used, as the meshes, filled with exudate, make an excellent media for bacterial growth. It is better to place one or two traction sutures than use the apposition sutures for traction, as they frequently pull out or produce constriction which interferes with healing. Horse hair is always to be preferred where cosmetic results are desired.

Fractures.—In general, we believe that fractures are treated too lightly. If, when examination is first made, the exact position can be ascertained, and if, reduction accomplished, the correction can be maintained, then by all means attempt reduction, using a general anesthetic if necessary. If, however, there is any doubt as to location of the fragments, or the possibility of failure in reduction, do not further traumatize the tissues by attempting reduction. Have the part x-rayed. One should never consider the treatment of a fracture complete until at least one röntgenogram has been made, and we would advise

one after reduction and one before discharge. Failure to x-ray a fracture is criminal negligence.

Head Injuries.—In the treatment of head injuries one should keep in mind that there is a latent condition as well as an immediate one. That there can be compression without previous concussion. The eyes should be examined for inequality; the ears and nasopharynx for bleeding. A severe head case should always be put at rest for twenty-four hours. It is advisable to give such patients a large dose of magnesium sulphate. This not only cleans out the intestines but also has a tendency to reduce intracranial pressure. Vomiting should be looked upon as most significant.

Abdominal Injuries.—A viscus can be ruptured without any external signs. In the upper abdomen one should think of the liver and the patient should be watched for signs of hemorrhage. The flanks should be percussed at frequent intervals. In the lower abdomen a ruptured bladder or kidney must be considered. For this reason it is always advisable to have the patient void in your presence or catheterize him. Never take his word for having voided after the injury. Abdominal distention must always be looked upon as serious, and the giving of cathartics is most certainly contraindicated—better use an enema, and then get the patient to a hospital.

While these remarks are, for the most part, academic in nature, I feel they should be of value if for nothing else than to review a subject of increasing importance in our everyday life.—*Abstract of paper read by Dr. Benj. I. Golden before the April staff meeting of the Davis Memorial Hospital.*

Heart Diseases in Children

(By Wilson, May G., Lingg, Claire, and Croxford, Geneva. *The American Heart Journal*, 4: 164-196, December, 1928.)

The authors of this paper attempted to collate some basic data concerning the natural history of heart disease in children. They were working on behalf of the Committee on Research of the Heart Committee of the New York Tuberculosis and Health Association. Perhaps the greatest interest enters upon the natural history of rheumatic infection in its relation to heart disease.

Observations were made upon 500 children, and from the data collected it is apparent that rheumatic infection is the most common causative factor in the resulting heart diseases of childhood. The clinical course is in marked contrast to that which was obtained in children with non-rheumatic heart involvement.

An analysis of the data presented on the natural history of rheumatic infection is a general infection. It attacks, mainly, children of school age, six to nine years; its course is characterized by frequent periods of activity, which are most frequent during the first three years after the onset. This is followed by a diminution of recurrences. This is particularly true after 12 years. Under the age of 3 and between 11–14 seem to be the most likely periods of vulnerability.

Periods of activity of infection included symptoms of growing and joint pains, polyarthritis, chorea, nodules, and acute carditis.

It is most probable that the heart is involved in this disease at the onset, though we may not always be able to detect it clinically. Sixty-three per cent of the cases showed an interval of one year or less. The extent of involvement of the heart increased with repeated periods of activity, and seemed to remain the same in the quiescent periods.

Thus it seems that in children rheumatic infections are general infections in which the heart is probably the first and main seat of involvement, though this is not easy to demonstrate clinically.

The associated manifestations of rheumatic infection were not indicative of the degree of heart involvement. Growing and joint pains bear the same relation to heart disease as polyarthritis or chorea.

The degree of heart involvement is closely related to the number of attacks of arthritis.

Twelve per cent of the children died, eighty per cent being due to rheumatic heart disease. The most common age at death was between 11 and 14 years.

The earlier the age of onset of infection the greater the number of recurrences. The later the age at onset, the greater the number of recurrences within one year.

From this it seems that the prevention of heart disease in children means the prevention of rheumatic infection.—*Abstract by R. J. Condry, M.D., Elkins, W. Va.*

Digestive Tract Diets

That there is perhaps too much fallacy regarding the undesirable effects of certain kinds of foods upon the human organism is maintained by Percy B. Davidson, M.D. (*American Medicine*, November, 1928). Whether autointoxication and "absorption of protein-split products" as well as excess of "high-

roughage foods," "gas," etc., due to the ingestion of excess carbohydrates, really give rise to the symptoms claimed is true or not, in the full sense of our interpretation, is questioned.

In general, a diet must satisfy the needs of the individual and contain the necessary "accessory factors," such as vitamins, minerals, etc. Diet must be adjusted individually "on the basis of the type of malfunction rather than on the disease entity."

It is important to prescribe correct foods in any effort to treat a disorder and maintain good health. Autointoxication is a rather doubtful problem. A diet high in roughage foods is responsible for many "functional" digestive disorders. "Gas" may be due to swallowing of air; the bad effects from fried foods are questionable; high fats are important unless specially contraindicated. In general, diets should be arranged to meet individual needs—considering all factors relating to such individual.

Clinical Diagnosis of Human Intestinal Protozoa

(By Robert Hegner, Ph.D., of Baltimore, Md.)

During the past ten years our knowledge of the intestinal protozoa of man has been revolutionized. Instead of diagnosing an intestinal infection as due to "monads," "cercomonads," "ciliated monads" or "flagellates," it is now possible to identify the organisms present without much difficulty. Some of the intestinal protozoa of man are apparently so rare that a physician would ordinarily never encounter them. Most of the individuals infected with protozoa are carriers and may remain infected for years. The various species are not antagonistic to one another, hence one person may carry two or more species at the same time. The diagnosis of intestinal protozoa requires the collection of fresh feces, dental scrapings, and urine. No positive diagnosis should ever be made without finding the protozoa in the samples collected. Many species can in most cases be readily identified in the living condition, but in cases of doubt it is necessary to kill and stain the motile stages (trophozoites) or cysts. Wet smears are satisfactory when many specimens are present; but concentration and culture methods have been devised to aid in diagnosis when the protozoa are few in number. Serological tests have been suggested for the diagnosis of amœbiasis but are not well enough worked out to be of practical use. Only three of the fifteen well-authenticated species of intestinal protozoa are known with certainty to be pathogenic to man—the amœba, coccidium, and the ciliate. Most persons with intestinal protozoa do not show symptoms. Diarrhea and dysentery are the most frequent symptoms. Infections of the vagina or urinary tract may be accompanied by the presence of blood and abnormal conditions in the production of mucus. Oral diseases are frequently accompanied by infections with mouth-inhabiting protozoa. The diagnosis of these various diseases should always be made on the basis of the finding of the parasite rather than on the character of the symptoms.—*International Clinics*, December, 1927.

TUBERCULOSIS ABSTRACTS

Symptomatology of Tuberculosis

Morton, two hundred years ago, speaking of tuberculosis, said: "There is no other malady which assumes so many protean forms and which is attended by such diversified symptoms and complications." The incipiency of the disease is often manifested only by a train of vague symptoms, sometimes extending over a long period of time. A painstaking consideration of these early symptoms, with a view of accounting for their origin, together with the evidence elicited by physical examination, often establishes an early diagnosis.

Sanatorium experience shows that careful study of the patient has frequently been omitted, that the examinations had not been complete, and that important aspects of the history were overlooked even when the symptoms are those commonly observed in pulmonary tuberculosis. Sanatorium physicians frequently see patients in whose lungs little or nothing is found on physical examination, but who constitutionally show clear and definite evidence of tuberculous disease as proved by the subsequent course of events. Dependence upon the physical findings and the sputum report alone will usually defeat a timely diagnosis.

Symptoms, Local and General.—Many diseases have a typical onset. The diagnosis of lobar pneumonia, for example, can frequently be made with a fair degree of certainty from a few key symptoms. But in the case of pulmonary tuberculosis this is impossible; there is probably no other disease which may begin in such widely divergent ways or which present such a variable symptom-complex. The reason for this is that the symptoms of pulmonary tuberculosis are both local, having their origin in the respiratory organs, and general, due to the effects of the disease on the system as a whole. The onset may be characterized by the exaggeration of any one of the many possible symptoms. Because

there is no typical mode of onset, we must be on the lookout for pulmonary tuberculosis in patients who consult us for symptoms which frequently seem to have no apparent connection with the lungs.

For many years, it has been taught that the pathognomonic group of symptoms that spell pulmonary tuberculosis were cough, expectoration with bacilli, hemoptysis, fever, chills, night sweats, fatigue, and loss of weight. By the time such classical symptoms present themselves, the local lesion is often moderately advanced, or advanced. Early and favorable cases present few of these symptoms. By this time, of course, a definite and conclusive diagnosis can be made; it demands little diagnostic skill and it comes too late for the patient to receive the maximum benefits that he should derive from modern means of treatment. A clinical recovery at this time may sometimes be attained, but the "cure" is likely to fall short of complete restoration of function and full working capacity. The symptom group or complex which we were taught as indicating early tuberculosis is now interpreted as meaning, in a large measure, advanced tuberculosis.

Onset Usually Gradual.—In the majority of cases, pulmonary tuberculosis develops slowly and the onset is gradual, so that it is impossible to determine the exact date at which the patient first noticed that he was ill. Even in those patients in whom some one symptom has developed suddenly, careful questioning will frequently reveal a preceding period of indefinite malaise or slight cought which has passed unnoticed. While this slow and gradual onset is characteristic of the majority of cases, it occasionally happens that the onset is sudden and acute, the symptoms appearing without warning in a previously healthy individual.

Pottenger states that, if a careful history of all patients who are suffering from the early symptoms of tuberculosis were taken and carefully appraised, the disease would be suspected in almost all, for in nearly every instance there is a history of one or more of the following symptoms: malaise, loss of strength and endurance, altered appetite, decline in weight, increasing nervousness, vague pains throughout the chest, acute pleural pains, slight tendency to cough or to become short of breath on exertion, repeated "colds," or the spitting of blood. These symptoms should invariably direct attention to the chest. If, in addition, there are a slight rise in temperature and a pulse easily affected by exertion, tuberculosis should be ruled out before any other diagnosis is made. He concludes that the "most important point in the diagnosis of tuberculosis is to know when to suspect it."

Diagnosis Often Delayed.—It has been shown that patients present themselves to their physician with definite complaints two to twelve months before they are diagnosed as having pulmonary tuberculosis. The complaints are apparently not significant enough to warrant a diagnosis of any disease, and the patient is many times treated symptomatically for conditions such as bronchitis, influenza, colds, pleurisy, unresolved pneumonia, nervous breakdown, nervousness, thyroid disease, "spots" on lung, throat trouble, asthma, anemia, catarrh, laryngitis, intercostal neuralgia, ulcer of stomach, gastritis, weak lungs, "cigarette" cough, stomach cough, neurasthenia, sinusitis, "female" trouble, and "heart trouble."

To stamp a person as actively tuberculous is a grave matter; to advise such a person to give up his work, to leave his home and family, if home conditions are unsuitable or unsatisfactory for treatment, and to go to a sanatorium or distant health resort is a serious matter. On the other hand, failure to recognize and treat tuberculosis in the early or incipient stage usually spells tragedy.—*Stephen A. Douglass, M.D., Sunnyside Sanatorium, Indianapolis.*

Food Value of the Papaya

Certain proprietary houses have capitalized the use of the dried juice of papaya (*Carica papaya L*) because of the ferment it contains, "papain." Papain has some of the properties of pepsin, but its digestive power is uncertain and feeble. As far as proprietary papaya preparations, which are claimed to contain the active principle, are concerned, the Council on Pharmacy and Chemistry voted as long ago as 1914 not to admit papaya preparations to New and Non-Official Remedies.—*Journal A. M. A.*, Feb. 23, 1929.

Contraindications to Salyrgan

Salyrgan is a complex synthetic mercurial which is contraindicated in acute nephritis and in the more severe chronic forms with nitrogen retention in the blood. In other cases of edema it may safely be employed in an initial dose of 0.5 c.c. of the 10 per cent solution, given intramuscularly or intravenously, and increased to 1 or 2 c.c. if required; injections are made at intervals of from three to five days. The preparation is marketed by H. A. Metz Laboratories, Inc., of New York.—*Journal A. M. A.*, February 23, 1929.

THE WEST VIRGINIA MEDICAL JOURNAL

JAMES R. BLOSS, *Editor-in-Chief* - - - - - - - - - Huntington

...ASSOCIATE EDITORS...

J. HOWARD ANDERSON, Marytown — WALTER E. VEST, Huntington — C. A. RAY, Charleston — HARRY M. HALL, Wheeling

THE JOURNAL issued on the first of each month. Entered as second-class matter January 1, 1926. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917. Authorized July 24, 1919.

Subscription to Members	$2.00 Per Year
Subscription to Non-Members	$3.50 Per Year
Single Copies	50 Cents

OFFICERS

President:
H. M. HALL ..... Wheeling

First Vice-President:
B. F. BONE ..... Moundsville

Second Vice-President:
W. C. SWANN ..... Huntington

Third Vice-President:
J. A. DUFF ..... Martinsburg

Executive Secretary:
MR. JOE W. SAVAGE ..... Charleston

Treasurer:
T. MAXFIELD BARBER ..... Charleston

Delegates to A. M. A.:
JAMES R. BLOSS (1928-29) ..... Huntington
HENRI P. LINZ (1928) ..... Wheeling

Alternates:
A. A. SHAWKEY (1928-29) ..... Charleston
HARRY M. HALL (1928) ..... Wheeling

COUNCILLORS

Chairman of the Council for 1928:
R. H. DUNN ..... South Charleston

First District:
C. W. WADDELL (2-year term) ..... Fairmont
C. G. MORGAN (1-year term) ..... Moundsville

Second District:
C. H. MAXWELL (2-year term) ..... Morgantown
C. H. HALL (1-year term) ..... Elkins

Third District:
JOHN FOLK (2-year term) ..... Bridgeport
J. D. COLE (1-year term) ..... Clarksburg

Fourth District:
ROY BEN MILLER (2-year term) ..... Parkersburg
W. E. VEST (1-year term) ..... Huntington

Fifth District:
J. HOWARD ANDERSON (2-year term) ..... Marytown
H. G. STEELE (1-year term ..... Bluefield

Sixth District:
R. H. DUNN (2-year term) ..... South Charleston
H. A. WALKUP (1-year term) ..... Mt. Hope

¶ All original articles for THE JOURNAL must be made to it exclusively. Communications and items of general interest to the profession are invited from all parts of the state. Notices of deaths, removals from the state, changes of location, etc., are requested.

¶ Our readers are requested to send marked copies of local newspapers containing matters of interest to members of the medical profession. Name of sender should be given.

CONTRIBUTIONS TYPEWRITTEN

¶ Contract with present printer specifies all articles, communications, etc., MUST BE TYPED.

ADVERTISEMENTS

¶ Advertising forms will go to press not later than the tenth of each month. All advertisements must conform to the standard established by the Council of Pharmacy and Chemistry of the A. M. A.

WOMAN'S AUXILIARY

Mrs. R. V. Shanklin, Gary, President; Mrs. T. H. Harris, Parkersburg, vice-president; Mrs. W. C. Swann, Huntington, secretary; Mrs. W. D. Simmons, Slab Fork, treasurer.

Councillors

Mrs. C. G. Morgan, Moundsville, first district; Mrs. Ralph Maxwell, Morgantown, second district; Mrs. H. D. Price, Parkersburg, third district; Mrs. J. R. Bloss, Huntington, fourth district; Mrs. A. G. Rutherford, Welch, fifth district; Mrs. E. S. DePuy, Beckley, sixth district.

Delegates to Woman's Auxiliary of A. M. A.

Mrs. R. V. Shanklin, Gary: Mrs. B. S. Preston, Charleston. Alternates — Mrs. George Jeffers, Parkersburg; Mrs. W. B. Scherr, Morgantown.

STANDING COMMITTEES

Medical Defense Committee

C. G. Morgan, Moundsville, Chairman; H. A. Walkup, Mt. Hope; H. G. Steele, Bluefield.

Committee on Scientific Work

O. B. Biern, Huntington, chairman; G. H. Barksdale, Charleston; A. G. Rutherford, Welch.

Public Policy and Legislative Committee

R. A. Ireland, Charleston, chairman; R. H. Walker, Charleston; James McClung, Richwood; C. R. Ogden, Clarksburg, D. A. MacGregor, Wheeling.

Committee on Medical Education

John N. Simpson, Morgantown, chairman; W. T. Henshaw, Charleston; W. S. Fulton, Wheeling.

Committee on Professional Relations

John R. Shultz, Charleston, chairman, (5-year term); A. G. Rutherford, Welch, (2-year term); W. R. Goff, Parkersburg, (2-year term): Hugh G. Nicholson, Charleston, (3-year term); E. P. Smith, Fairmont, (4-year term)

Workman's Compensation Committee

W. A. MacMillan, Charleston, chairman; C. A. Ray, Charleston; John E. Cannaday, Charleston.

Committee on Public Health

David Littlejohn, Charleston, chairman: John Thames, Charleston; Will McLain, Wheeling.

Surgical Section

Robert King Buford, Charleston, chairman; B. I. Golden, Elkins.

Eye, Ear, Nose and Throat Section

I. D. Cole, Clarksburg, chairman; C. C. Jarvis, Clarksburg.

Hospital Association Officers

R. A. Ireland, Charleston, president; J. S. Turk, Wheeling, president-elect; B. I. Golden, Elkins, first vice-president; W. E. Vest, Huntington, second vice-president; Mr. Joe W. Savage, Charleston, secretary-treasurer.

PRESIDENT'S PAGE

IT WOULD seem a bit incongruous to speak of rhododendrons in a medical journal for it is there the circus movements of a drunken bundle or the unharnessed orgy of a criminal cancer cell generally comes into its own. Still, plant life and pathology were ever linked together in the mysteries of life.

The kalmia, or mountain laurel, and the West Virginia State Medical Association meeting come along often together, so that flower, although not a rhododendron, might be accepted as our emblem, too. The Eastern Panhandle has taken us to its bosom and we are back again. We have taken our politics a little seriously. We have heard good men speak their minds on medical subjects of the day. We were gathered together in the priceless intercourse of friends, which, in our declining years, will serve to lighten the infirmities of age with tender memories. What if we had no mountain laurel! What if we had no medical societies! If, in the sojourn at the meeting, your unfurling of your banner in honest opposition brought you not the reward you hoped, 'twere better to laughingly forget and remember the mountain laurel and the rhododendrons still bloom. West Virginia is a great state, and center your talents on making it and its flower known throughout the medical world of America.

Vacation bears on apace. Cool mountain brooks beckon. Gorgeous flowers line the roads. The medical profession has its imperfections, but it has progressed to where in many places you can go and enjoy these inviting haunts and leave your work in the hands of your competitor, and when you come back it will be yours once more as you left it. Cynic you may be, and viewing with disdain so much; yet will you, with it all, be driven to grant the merit of these words. Yes, there are many places in West Virginia where a doctor can gaze up at the red and pink blooms on the mountain-side, pick up his hat, say, "I am going," figuratively tack on the door, "Will not return until July 10th," and be off. Confidence in himself and his rivals. He believes his following will recognize his worth and stay loyal. He thinks his "friendly enemies," even if called into some of his "best families," will give him the best of the breaks. Is it not a fine commentary?

Yes, there are exceptions! Where there are, each fellow should look himself over in his room. The both meet at a prize-fight or ball game. Yell together. Grab each other's hat. Look each other in the face and ask each other this question, "What is the difference between a jimpson weed and a rhododendron—unless you happen to be a crabbed old asthmatic?"

Harry M. Hall

EDITORIAL

Boards of Censors

On two different occasions during the past two years, component societies of the West Virginia State Medical Association have accepted for membership doctors whose records were anything but commendable. Both of the doctors in question had gone in for various forms of quackery in other states before coming to West Virginia. Both had been exposed in the columns of the *Journal of the American Medical Association*. Both had sought shelter in West Virginia, where they were not known and where they quietly "set up shop" and began the practice of medicine.

The two societies that accepted these doctors naturally dropped them from their membership rosters when the facts were brought to light. It was rather an unpleasant duty. Unquestionably the board of censors of each society investigated the character of each doctor, and, finding nothing adverse, made favorable recommendations. However, had their investigations gone as far as the American Medical Association, their societies would have been spared no little embarrassment.

Cases similar to the two mentioned above are not frequent, but when they do occur they are often followed by annoying complications. More than one county society in America has been called upon to answer a civil suit that followed upon the heels of a quack expulsion. The remedy is quite simple. If a doctor, who is not well known, petitions for membership in a county society, the board of censors of that society should merely drop a line to the executive secretary and request a report. A report can be obtained in less than ten days. If the report is not favorable, the petition can be turned down. If the report is favorable, the society can use its own judgment.

COMMUNICATIONS

EDITOR, WEST VIRGINIA MEDICAL JOURNAL.

Dear Sir:

In your April issue you discuss certain proposed legislation detrimental to and subversive of the state's medical practice act, under the heading of "The Value of Facts." You assert that the lay mind does not ordinarily accept facts! May I make so bold a statement as to assert that neither the lay mind nor the professional mind can possibly do anything else? I will agree that the mind may ignore facts when the facts run counter to its desires or to what it believes to be its best interests, but mind must and does accept "fact."

I would not address you on this but for the reason that it brings out certain things I have tried, in time past, to get across to the profession through the pages of the JOURNAL.

Why, then, must mind accept fact? For the simple reason that the mind is a correlative of truth and its structure is logical. When mind undertakes to think a thing as it is not, it finds it impossible to form a conception, the inflexible facts rendering the mind powerless to proceed. In other words, mind will not think a lie, though it may conceive a lie and the mouth utter it; but mind always recognizes the untruth.

In the case of the doctor from Pendleton county seeking license, it was only necessary to present the "facts" to the legislature. These left the mind that was without prejudice but one course to pursue. You know the results.

Since the subject is "Fact," let us define it: *Fact* is reality; it is that which exists; it may be an object, an event, a condition, a relation, and it may be mental or material. Further, *fact* is the primary, original, ultimate and only source of knowledge.

You have set forth the reaction of the legislators when Dr. Rankin presented the facts to their minds relative to the country practitioner. What he did was simply to put the facts before the mind, which caused them to apprehend the true state of affairs and brought them knowledge of the conditions with which they were dealing.

In every matter of argument, dispute or controversy there is some thing or things that are not facts, otherwise there would be no argument. It may be theory, hypothesis, opinion, prejudice, avarice, or something else; whatever it is, it is not "fact."

As to "pseudo-facts" (if you will pardon me), in the light of the above they can not exist. A fact is either fact or it is not. There are many things set forth as facts that are something else, and the unthinking or uninformed mind may accept them as such. But when the mind has seen the thing as it is, it must of necessity recognize the fallacy. It is true that the mind's eye may be blinded by prejudice or something else, so that it fails to discern the truth.

Now, as to regular medicine and medical practice, there are facts, many in number, that stand the light of most rigid and thorough investigation. There is, of course, of necessity, much of theory and hypothesis. It has come down through time im-

memorial, and, like the brook, "goes on forever."

As to "cults" and irregular practice, there are fallacies, many in number, that will not stand the light of even a superficial examination. Further, "cults" come and go. Each age, from time immemorial, has produced its quota, to be succeeded by other "cults" in the next, and so on, *ad infinitum*.

In the light of the above, it would seem only necessary to present to legislators, and the people at large, the "facts." Let, therefore, each regular practitioner of medicine constitute himself an apostle spreading *knowledge*, which is the apprehension of *truth*, that the people at large may get the "facts" concerning medical practice in our state.

Very truly yours,

CLAUDE L. HOLLAND, M.D.

Fairmont, West Virginia.

COUNTY SOCIETY NEWS

Central Tri-State

The regular quarterly meeting of the Central Tri-State Medical Society was held at the Masonic Temple, Portsmouth, Ohio, on the afternoon and evening of May 16, 1929. The meeting was presided over by Dr. W. R. Laird, of Montgomery, president, and the attendance was good. This was the first meeting of the Central Tri-State society that has been held outside of Huntington.

The program was opened with an address of welcome by Honorable J. J. Jones, mayor of Portsmouth. Following this, a scientific address was presented by Dr. Albert Freiberg, of Cincinnati. Dr. Frank Lahey, of Boston, then read a most interesting paper on "Goiter," and the discussion was opened by Dr. André Crotti, of Columbus, Ohio. Dr. David Riesman, of Philadelphia, gave a paper on "Symptoms and Treatment of Early Heart Failure," which was discussed by Dr. John Greiwe, of Cincinnati. The final paper of the afternoon session was presented by Dr. J. C. Small, of Philadelphia, on "Recent Developments in the Etiology and Treatment of Rheumatic Fever," which was discussed by Dr. Albert Friedlander, of Cincinnati.

Following a banquet at the Masonic Temple, the evening session was concluded with a paper by Dr. Lewis Gregory Cole, of New York City, on "Actual Results of Medical and Surgical Treatment of Gastric and Duodenal Ulcer." The discussion of this paper was opened by Dr. Dudley Palmer, of Cincinnati.

J. S. KLUMPP, Secretary.

Ohio County

A "Symposium on Childhood Tuberculosis," by Dr. John W. Gilmore, of Wheeling, featured the April 26 meeting of the Ohio County Medical Society, which was held at the Wheeling Elks' Club. The symposium, which was presented in the interest of the 1929 nationwide early-diagnosis campaign, was thrown open for general discussion at its conclusion.

The annual banquet and dance of the Ohio County Medical Society was held at the Fort Henry Club in Wheeling on the evening of May 17. The banquet opened at six o'clock and was followed by the scientific program. The essayists were Dr. Lewis Gregory Cole, of New York City, who spoke on "Peptic Ulcer," and Dr. W. S. Fulton, of Wheeling, who spoke on "Medical Africa." Dr. Harry M. Hall, president of the state association, served as toastmaster.

Following the scientific program, a business meeting was held, at which time all business incident to the close of the fiscal year was disposed of. After the business meeting, the dance was held at the Fort Henry Club. This was a most interesting and entertaining affair and was well attended by the members of the Ohio County Medical Society and their wives.

H. W. BOND, Secretary.

Monongalia County

The regular monthly meeting of the Monongalia County Medical Society was held on Tuesday evening, May 7, in the Junior High School library at Morgantown. Dr. W. H. Guy, of Pittsburgh, was the scientific essayist of the evening, and presented a most interesting paper on "Drug Eruptions." His paper was thrown open for general discussion upon its conclusion.

G. R. MAXWELL, Secretary.

Eastern Panhandle

An enthusiastic meeting of the Eastern Panhandle Medical Society was held at Martinsburg on April 30, with a large number of doctors in attendance. Plans for the state meeting were formulated at this session and the various local committees reported the arrangements as being about complete. The society decided to obtain a list of available rooms in the better homes of Martinsburg to take care of visiting doctors to the convention, in case there was an overflow at the hotels.

W. ROSS CAMERON, Secretary.

Kanawha County

Dr. Joseph A. Freiberg, of Cincinnati, was the scientific essayist at the May 14 meeting of the Kanawha Medical Society, which was held in the public library auditorium in Charleston. Dr. Freiberg spoke on "Congenital Dislocation of the Hip," and the discussion upon this paper was opened by Dr. Francis A. Scott, of Huntington, and Dr. E. B. Henson, of Charleston. The paper was most interesting and was accompanied with lantern slides. About thirty-five members were present.

RUSSEL KESSEL, Secretary.

Marshall County

A most interesting meeting of the Marshall County Medical Society was held in the court house at Moundsville on the afternoon of May 14, with Dr. John Phillips, of Cleveland, as the scientific essayist. His subject was, "The Treatment of Patients with Chronic Cardiac Disease." A good crowd turned out for this meeting, to hear Dr. Phillips.

D. B. EALY, Secretary.

ANNOUNCEMENTS

Pharmaceutical Meet

The annual meeting of the American Pharmaceutical Manufacturers Association will be held at the Chamberlin-Vanderbilt Hotel at Old Point Comfort, Va., on June 3–6, 1929. Invitations have been extended to more than twenty-five leading Canadian manufacturers, while representatives of the British Chemical Manufacturers will also probably be in attendance. This year's meeting promises to be one of the best in the history of the association.

Heart Association

The scientific session of the American Heart Association will be held in Portland, Oregon, on July 9, 1929, during the meeting of the American Medical Association. This announcement was recently made by Dr. I. C. Riggin, executive secretary, from the New York office of the organization.

Mississippi Meets

The sixty-second annual session of the Mississippi State Medical Association was held at Gulfport on May 14–16, 1929. The conventions of the Woman's Auxiliary and the Radiological Association were also held at the same time, in connection with the state association meeting.

Minnesota Meeting

The sixty-first annual meeting of the Minnesota State Medical Association was held at St. Paul on May 13–15, inclusive, 1929. The Woman's Auxiliary to the Minnesota association also held its yearly meeting at the same time.

Kansas Medical Society

The seventy-first annual meeting of the Kansas Medical Society was held at Salina, Kansas, on Tuesday, Wednesday and Thursday, May 7–9, inclusive, 1929. The out-of-state speakers included Dr. Charles Hugh Neilson of St. Louis, Mo.; Dr. Philip H. Kreuscher of Chicago, Ill.; Dr. Granville S. Hanes, of Louisville, Ky., and Dr. H. E. Marchbanks of Pittsburgh, Pa.

Nebraska Meeting

The sixty-first annual convention of the Nebraska State Medical Association was held at Omaha on May 14–16, inclusive, 1929. Out-of-state speakers included Dr. Gerald B. Webb of Colorado Springs, Colo.; Dr. Carl A. Hedblom, of Chicago; Dr. John R. Caulk of St. Louis, Mo., and Dr. Charles A. Elliott, of Chicago, Ill.

Trudeau Club Programs Available

A limited number of copies of a pamphlet on the diagnosis and treatment of tuberculosis, prepared by the advisory staff of the St. Louis Medical Society, are available to physicians in West Virginia on application to the State Tuberculosis and Health Association, 910 Quarrier Street, Charleston.

The topics discussed in the six papers included in the pamphlet are as follows: Diagnostic Methods in Tuberculosis; Tuberculosis in Childhood; Medical Treatment of Pulmonary Tuberculosis; Surgical Treatment of Pulmonary Tuberculosis; Heliotherapy in the Treatment of Tuberculosis; Home Care of the Tuberculous.

PUBLIC HEALTH

Hookworm in West Virginia

That West Virginia is in the hookworm area has been definitely established by the number of cases of this disease which have been discovered within the state during the last two years, as revealed by the records at the State Hygienic Laboratory. Until the spring of 1927 is was thought this state was beyond the hookworm area. At that time specimens from eighteen suspicious cases were sent to the laboratory

by Dr. W. H. Enneis, director of the Boone County Health Unit. Of this number, eight specimens showed definite hookworm infection and the others showed infection from some other intestinal parasite.

From May, 1928, to May, 1929, 105 specimens were sent to the State Hygienic Laboratory, 59 of which were found to contain evidences of hookworm infection. While these specimens came from different parts of the state, it was pointed out, the majority were from sections in which coal mining is the principal industry. While it has been thought that hookworm, or ground itch as it is called in some places, requires heat, moisture and shade for its development, it has been found that coal mines afford a good place for the growth of the larva, which hatches outside the body of the victim. Carelessness in sanitation is said to be the chief cause of the spread of this disease.

Trachoma Prevention

The United States Public Health Service has for several years carried out a program of maintaining small hospitals for the treatment of trachoma, located at strategic points in the affected area. At present trachoma hospitals are being conducted in Kentucky, Tennessee, and Missouri, with the financial and moral coöperation of those states. In many localities the trachoma work conducted by the Public Health Service has given the people their first view of public health work of any sort and their first idea of the possibility of disease prevention.

It is easier for state health authorities to persuade a county to install a full-time health department if energetic trachoma eradicative measures have been undertaken in that county. Conversely, it is possible to do much more effective trachoma prevention work with the assistance of a well-organized county health department, especially when the state health department is manifesting an active interest in the campaign. Evidence which has accumulated as the work has progressed indicates that Missouri and Arkansas probably have as much trachoma as Kentucky had when the work began, and that it exists to a dangerous extent in several other states. It is not uniformly prevalent throughout any state; some communities are heavily infected, while others are relatively or completely free from it.

Resurveys conducted from time to time show the beneficial effect of this trachoma eradicative work. In certain areas trachoma is about to become a thing of the past as a result of the work done in those areas within recent years. The trachoma hospitals maintained by the Public Health Service have a fourfold function: First, the clinical treatment of trachoma for the purpose of preventing damage to sight and stopping the patient from being a spreader of the disease. Second, a study of the disease itself. The physicians engaged in this work are constantly on the alert for improved methods of diagnosis and treatment. Third, education of patients in personal hygiene and disease prevention. Fourth, the trachoma hospitals are centers for operations directed toward the eradication of this disease.

School Physicians Organize

The American Association of School Physicians has recently been organized, the Bureau of Education, Department of Interior, stated April 25, as a result of the recent growth in school health work. The full text of the statement follows:

This organization came as an outgrowth of two conferences, the first of which was held at Buffalo, N. Y., in October, 1926, and the second, in Cincinnati, Ohio, October, 1927. The first annual meeting of the American Association of School Physicians was held in Chicago, Ill., October 15, 1928, and was largely attended by school physicians from 27 states, the District of Columbia, and Canada. The membership numbered 324 in November, 1928.

Among the subjects discussed were: Education qualifications for school physicians; a study of medical inspection and health service in normal schools and teacher-training colleges; correction of remediable health defects; the teacher's health condition and attitude a factor in her professional rating; health examinations; a standard group Snellen test for school children, and the present status of student health service, its extent and scope.

A study was recently made of 100 strictly teacher-training institutions. City normal, state normal schools and teachers' colleges were selected at random from the Educational Directory issued by the Bureau of Education, as representative of various sections of the United States. From this selection it was possible to make a reliable study of 50 schools. These were scattered over the United States and located in 33 different states. To this number were added schools available to various members of the committee, making possible a study of 65 different schools.

Some of the findings of this study were: 1. Seventy-six per cent of these teacher-training institutions require a health examination of students on

entrance; only 12 per cent do not require it. Six per cent of them give a partial examination, and with 6 per cent it is optional. 2. The examinations of 62 per cent of the students in these teacher-training institutions were made by the college physician; 12 per cent by the local physicians; 2 per cent by family physicians; 4 per cent by the physical department of the institutions, and 20 per cent did not state who made the examination.

This association advocates very strongly the employment of a school nurse, and the provision of a room designated as a health room, where the nurse reports at an appointed time and where the children, parents and teachers come to talk over with her their many problems and difficulties.

Disabling Sickness

For some time past the Public Health Service has been conducting studies on the frequency of disabling illnesses among industrial employees. In connection with such studies the experiences from a group of 35 industrial sick-benefit associations and company relief departments have been carefully analyzed. The following results of these studies are of considerable interest:

Although statistics of sickness frequency, based upon the claims for sickness benefits of members of industrial mutual associations, do not for various reasons actually measure the incidence of disability which lasts more than one week, they do afford some knowledge of the sickness experience of a sample of the industrial population.

Respiratory diseases were reported as the cause of 41.8 per cent of the claims for illness benefits, digestive diseases 13.7 per cent, and external causes (non-industrial accidents) 10 per cent. These three groups, accordingly, accounted for virtually two-thirds of the cases for which sick benefits were paid by associations reporting to the United States Public Health Service.

In the respiratory group, influenza and grippe were of outstanding importance, accounting for nearly one-half of all the respiratory cases recorded during the seven years ending December 31, 1927.

In the digestive group, diseases of the stomach (not including cancer), appendicities, diarrhea and enteritis, and hernia were the most important numerically, in the order named, 1921–1927.

Next to the digestive diseases the circulatory-urinary group showed the largest number of cases, followed by rheumatism (acute and chronic). Diseases of the nervous system, diseases of the skin, diseases of the organs of locomotion, and the epidemic and endemic diseases constituted the remaining groups of importance numerically.

The incidence rates by years, 1921–1927, showed an upward trend for both respiratory and the non-respiratory group of diseases. Each year since 1922 the frequency of external causes (non-industrial accidents) has been larger than in the preceding year. Influenza and grippe principally accounted for the upward trend in the respiratory incidence rates. Among the non-respiratory diseases, digestive diseases and the circulatory-urinary group showed the most perceptible increases.

The frequency of cases according to their duration in weeks was ascertained for 1922–1924 and for 1925–1927 in the 15 associations which reported continuously throughout both periods. In 1925–1927 there was a lower rate of cases lasting 8 to 20 days than during the preceding three years, but a higher rate of cases lasting 8 weeks or longer.

The frequency of 8-day or longer disabilities was 50 per cent higher among female than among male industrial employees, 1921–1927, although the comparison excluded nearly all diseases which were not common to both sexes.

A low sickness rate was found among employees of the iron and steel industry. The rates were especially low for neurasthenia, the digestive diseases, bronchitis, influenza, and grippe among steel workers. The incidence rate of pneumonia, however, was found to be considerably higher in steel than in the other industries represented, and a special study is in progress to determine the causes of predisposition to pneumonia in this industry.

The seasonal peaks of sickness incidence were determined largely by the frequency of respiratory diseases, and especially by influenza and grippe. The non-respiratory diseases as a group also showed a tendency toward greater prevalence in winter and early spring than in the summer and autumn months.

FROM OTHER JOURNALS

Prevalence of Quackery

A situation which exists at present in the state of Iowa relative to public health and medical practice should serve as a warning against those seeking to modify or destroy the statutes governing those who desire to administer to the sick.

"Iowa is a happy hunting ground for quacks and phoney medical practitioners." This was the state-

ment made recently by D. C. Steelsmith, deputy state commissioner of health of Iowa, in an interview carried in the daily press.

According to Steelsmith, there are between 600 and 900 persons now violating the Iowa medical practice statutes because of the weakness of Iowa's regulatory laws as compared to other states'.

Health officials in the Cornhusker state estimate that of the 2,725 deaths that resulted from cancer in Iowa during 1928 at least 1,000 could have been prevented if the patients would have received early treatment from reputable physicians instead of resorting to "quacks."

A statement by H. W. Grefe, director of the division of examinations in the Iowa health department, shows why that state is having difficulty in dealing with quackery.

"Many patients have so much faith in illegal practitioners they refuse to testify against them," Grefe declared. "Others are ashamed when they discover they have been bilked and will not appear against the illegal practitioners for fear of being made ridiculous in the eyes of others; and reputable medical men are hesitant about taking action against quacks for fear the public will ascribe the action to professional jealousy."

The crisis in Iowa shows only too well the danger which results from establishing feeble laws regulating the practice of the healing arts.

Ohio has definite statutes regulating the practice of medicine and its limited branches, and entrance thereto. These should be maintained, or even strengthened. Even under the high standards set up by the Ohio medical practice act, this state is not free from quackery, cults, and unlicensed practitioners. Attempts to let down the bars to the unqualified should be defeated in the future as they have been in the past. Ohio should continue to be an "unhappy" hunting ground for the phoney and incompetent practitioner.—*Ohio State Medical Journal.*

Syphilis and Diabetes

Syphilis is an ubiquitous disease, and while diabetes mellitus is considerably less frequent in the general population, nevertheless it is said to be present in approximately one out of every hundred of the population. On account of the frequency of these two diseases it necessarily follows that considerable interest has arisen as to the effect that the one disease has on the other, and particularly as to whether there is any genetic relationship of syphilis to diabetes. This argument commenced some 75 years ago and has continued up to the present time. Lemann* has presented a most thorough review of the literature in a recently published, most complete discussion of the whole subject. He notes that there is extremely good clinical and post-mortem evidence to show that diabetes may in some cases be produced by syphilitic diseases of the pancreas; a rare occurrence, however, and one which is extremely unlikely to happen to the syphilitic patient. Diabetes, while attributed at times to syphilis of the central nervous system, is never secondary to this hyphilitic manifestation. Needless to state the occurrence of one or the other of the two diseases during the course of that disease which had not been previously present affects unfavorably the subsequent history of the case. While the progress is not as seriously affected as one would expect when there is an association of two such severe diseases as syphilis and diabetes, nevertheless there is an effect on the primary disease which is distinctly deleterious. One of the interesting observations which is made is that the diabetic with syphilis is much more likely to develop arterial diseases associated with gangrene than is the non-syphilitic individual with diabetes.

When one considers the frequency with which syphilis attacks the central nervous system, the cardio-vascular system, the liver, and other important organs of the body, one is struck by the fact that the glands of internal secretion possess a peculiar freedom from the disease. Proof of this statement is substantiated by the pancreas, with its dual functions, as diabetes, the expression of disease of the internal secretory portion of the gland, is rare in the syphilitic.—*New Orleans Medical and Surgical Journal.*

* Lemann, I. I.: The Relationship of Syphilis and Diabetes to One Another. *Am. J. Syph.*, 13: 70, 1929.

Health Advertising

In America, advertising is the greatest industry. Selling health, or selling anything else by relating it to health, has become a favorite twentieth century practice. In the technical departments of any public library of reasonable size are to be found many medical textbooks and countless books which purport to be medical, which have a wide lay circulation. There is nothing, according to an experienced reference librarian, which the public devours so eagerly as essays upon its health.

To this popular fancy is due, of course, the large fortunes which have been made in patent medicines. It is a very recent thing that the cigarette interests have determined to advertise their products as health

giving, and the caption, "Reach for a Lucky instead of a sweet" (to retain one's girlish figure), has apparently caused the sugar interests and other food dealers much concern, and even aroused threats of their ire. They have objected less to the more sharing attitude of another cigarette whose ads read: "Take a box of chocolates and an Old Gold." To the impartial bystander it is doubtful that continually keeping anything in the mouth, sweet or tobacco, is beneficial.

Some of these tobacco manufacturers are advertising extensively over the radio chains, and much pressure is being brought to bear to have this stopped. "The United Restaurant Owners' Association calls to the attention of the Federal Radio Commission an insidious, unmoral and outrageous campaign now being broadcast through the air to 40,000,000 men, women and children in the United States, intended to transform the youth of the country into confirmed cigarette addicts, regardless of established medical and health findings."

Advertising which helps one industry rarely fails to hurt another, though Hershey's cholocate advertised itself years ago as "A sweet to eat, more sustaining than meat," apparently without greatly injuring meat sales. The raisin growers have long played up the iron content of their product and falsely claimed it a good substitute for meat.

It is a question whether advertising methods are creeping into the medical profession itself. Among professional men, physicians, lawyers, architects, it has long been the custom to forbid all paid advertising, and this is a wise provision. Incidentally, if one man advertises all must advertise, and the cost of a professional education is too great without the added expense of advertisement after it is obtained. If it were customary for members of the medical profession, for instance, to use paid advertisements, no physician would win a practice again on his own merits. Like Old Gold and Listerine, all would be puppets in the hands of expert ad-writers, and the much-talked-of cost of medical care would probably have to rise in proportion.

Public health interests have long found it very useful to advertise. Wise publicity to the lay voters has been profitable and necessary to them, though they have not employed paid ads to bring out the desired facts. Wisely used, their methods have greatly enlightened the public on many public health subjects which require money appropriations for their execution.

A distinguished member of the medical profession in Chicago, Dr. Louis Schmidt, has recently been expelled from membership in his medical society for his connection with a clinic which advertised. His expulsion was followed by the resignation from the society of two physicians of excellent standing in public health circles, Dr. Herman Bundesen and Dr. Rachel Yarros. Whether this represents the beginning of a recognized cleavage between the practicing physician and the public health worker is the question in order for solution. It is a very vital problem how far paid advertising, which can rarely be scientifically accurate, is to be allowed to affect medical practice.—*Southern Medical Journal.*

The Ringworm Problem

Dermatologists throughout the country are aware of an enormous increase in the number of cases of fungus infections coming to their attention. Many claim that almost one-fourth of their practice, especially in the summer months, consists of the various types of ringworm, especially that type due to the epidermophyton. Ringworm of the hands and feet, which paraded in the past under such homely names as eczema, chafe, and toe-itch, is now one of the commonest, most important and obstinate conditions in dermatological practice. At the present time clinicians and laboratory workers in our large medical centers are engaged in finding a successful physical, chemical, or biological cure for these minor but distressing conditions.

Attention is also called to the importance of early diagnosis in favus, a serious fungus infection caused by the Achorion schöenleinii. This disease causes permanent atrophy and alopecia. It has been very stubborn to treatment in the past, but with x-ray epilation the prognosis is more optimistic. Fortunately, the disease is rare in this part of the country. The ordinary types of ringworm seen in children are always with us and are easily cured by parasitical treatment.

The large increase in the number of cases of ringworm infection is not only due to more accuracy in clinical and laboratory diagnosis, but to the fact that lately the public has taken a greater interest in recreational facilities, bringing them in closer contact in gymnasiums, swimming pools, and recreational centers, all important sources of infection.—*Journal of the Missouri State Medical Association.*

GENERAL NEWS

The Martinsburg Meeting

The sixty-second annual meeting of the West Virginia State Medical Association closed at Martinsburg at noon on May 23. At the meeting of the house of delegates on the last morning, Dr. Walter E. Vest, of Huntington, councillor and publication board member, was unanimously elected as president for 1930. White Sulphur Springs was selected as the place for the 1930 meeting.

Other officers and committee members selected at the Martinsburg meeting were: Dr. A. B. Eagle, of Martinsburg, first vice-president; Dr. R. V. Shanklin, of Gary, second vice-president; Dr. F. T. Scanlon, of Morgantown, third vice-president; Dr. T. M. Barber, of Charleston, treasurer; Dr. C. G. Morgan of Moundsville, Dr. C. H. Hall of Elkins, Dr. S. S. Hall of Buckhannon, Dr. O. B. Biern of Huntington, Dr. H. G. Steele of Bluefield, and Dr. H. A. Walkup of Mount Hope, councillors.

DR. W. E. VEST, HUNTINGTON
Our President

Next year's committee on scientific work will be headed by Dr. Howard T. Phillips, of Wheeling. The other two members of this committee are Dr. R. C. Hood, of Clarksburg, and Dr. Robert King Buford, of Charleston. Dr. H. P. Linsz, of Wheeling, was named as delegate to the A. M. A. meeting, with Dr. R. U. Drinkard, of Wheeling, as alternate.

The Martinsburg meeting was successful in every sense of the word and the registration was well over 200 members of the state association. The auxiliary registration and meetings were very satisfactory. Mrs. W. C. Swann, of Huntington, will serve as the new president of the Auxiliary for next year.

The meeting opened sessions of the council and house of delegates on May 20, at which time all committee reports were read and accepted. The general session opened at 10 o'clock on the morning of May 21 with Dr. Harry M. Hall, of Wheeling, president, presiding. The sectional meetings were held on Wednesday afternoon and the convention adjourned shortly before noon on Thursday, May 23.

Two innovations at the Martinsburg meeting were, respectively, the Wertheim clinic film, "Obstetrics and Gynecology," furnished through the courtesy of the state health department, and the Canti cancer film, which was procured by Dr. F. L. Hupp, of Wheeling. It was hoped by many of the members present that the state health department would purchase a part of the Wertheim clinic film to show before the county societies over the state next fall.

The complete minutes of the Martinsburg meeting, together with all committee reports, will be published in the July issue of the JOURNAL.

Value of Active Immunization

Guy L. Kiefer, Lansing, Mich. (*Journal A. M. A.*, Dec. 15, 1928), discusses the value of active immunization against scarlet fever with examples of the experimental work carried on in schools and other institutions in Michigan. He presents the following problems for future investigation: (1) The toxin for skin testing must be held uniform and every effort should be made to develop methods of preparation and standardization so that we may be assured of a standard skin-test dose. (2) The duration of immunity in relation to the amount of toxin given should be studied more carefully over a longer time. (3) Polyvalent toxins and antitoxins should be investigated more extensively.

MEDICAL ORGANIZATION IN WEST VIRGINIA *

Retrospective and Prospective

By S. S. WADE, M.D.
Morgantown, W. Va.

A fairly careful inquiry and a right extensive investigation reveal three distinct and separate periods of activity toward organization among our medical bodies.

First Period.—In 1847, while we were still a part of Virginia, the Medical Fraternity of Wheeling and Ohio County issued a call for a meeting, and the minutes read: "Agreeable to a previous call, a meeting of the Medical Faculty of the City of Wheeling and Ohio County was held on the 5th of July 1847, at which time committees were appointed to recommend a plan of organization." At a subsequent meeting, held on the 12th of August, 1847, a constitution and by-laws, code of ethics and fee bill were adopted, and upon balloting for the several offices the following gentlemen were elected, *viz.*:

Dr. M. H. Houston, president; Dr. James Tanner, vice-president; Dr. W. J. Bates, corresponding secretary; Dr. E. A. Hildreth, recording secretary and librarian; Dr. Thomas Townsend, treasurer.

Those present at this county meeting were: Dr. M. H. Houston, Dr. Thomas Townsend, Dr. W. J. Bates, Dr. James Tanner, Dr. John Frizzell, Dr. S. P. Hallihan, Dr. E. A. Hildreth, Dr. Archibald S. Todd, Dr. S. Forney, Dr. T. Yates, Dr. James McCoy, Dr. Edward Bingall, Dr. S. W. McElhaney, Dr. James P. Brotherton, Dr. John English.

The Ohio County Medical Society functioned for twenty years as our only medical society, and was, on October 17, 1868, superseded by the Medical Society of the City of Wheeling, with the following officers:

Dr. Archibald S. Todd, president; Dr. Robert H. Cummins, vice-president; Dr. Henry J. Weisal, secretary; Dr. John C. Hupp, treasurer. On the board of censors (not noted before) were Dr. E. A. Hildreth, Dr. W. J. Bates, and Dr. Richard Blum.

This medical group of Ohio county were gentlemen who did honor to our profession by their loyalty and efficiency. They had little of specific medicine—quinine for malaria, mercury for lues, and vaccination against smallpox, but no diphtheria antitoxin, no typhoid vaccine, no tetanus antitoxin, no antirabic serum, no scarlet fever antitoxin, no convalescent serum used for prevention or modification of other contagious and infectious diseases such as measles and infantile paralysis, no insulin for diabetes, and in their surgery they were without the present-day antiseptic care and practice, of course.

The work they did, with the surroundings of that early day, and the means and material at hand with which to work, merits for them, from us, the title, Our Pathfinders, Our Trail-Blazers—for they did point us to the clear way to advancement and improvement by organization.

Second Period, 1867.—Before this year we had no state organization; but, on April 10th, by prior call, a number of physicians met at Fairmont and answered by call of counties (you will remember the semi-centennial meeting which was held in Fairmont, 1917). The counties and the number of their representatives answering the call were as follows:

Harrison, 2; Marion, 3; Monongalia, 3 (H. W. Brock, G. W. Dent, H. N. Mackey); Ohio, 11; Preston, 1; Taylor, 2; Upshur, 1.

A paragraph of that call:

"To the Medical Profession of West Virginia: Gentlemen: As a means of elevating the standard of practical medicine and surgery in West Virginia, and to render quackery odious as it deserves, the want of a state medical organization is severely felt by all true cultivators of our noble science within the limits of our state."

How like a call of more recent years or even of the present day!

The records at Charleston indicate that a second meeting in 1867 was held in Wheeling October 2d. The following officers for 1867-68 were elected:

President, Dr. John Frizzell, Wheeling; vice-presidents, Dr. Jesse Flowers, Mannington, Dr. H. N. Mackey, Morgantown, Dr. J. M. Lazzell, Fairmont; secretary, Dr. J. E. Reeves, Wheeling; treasurer, Dr. John C. Hupp, Wheeling. The committee on publication was composed of the secretary and the treasurer, and Dr. James H. Brownfield, Fairmont, Dr. Henry J. Weisal, Wheeling, and Dr. F. C. Shepherd, Bruceton.

Dr. Hupp made the following motion at this meeting: "That it be expedient to organize a permanent Medical Society of the State of West Virginia," and the following committee of seven was appointed to report a constitution and by-laws for the government of the society: Drs. Brock, Reeves, Hupp, Frizzell, Dent, Lazzell, and Campbell.

* Read before the Monongalia County Medical Society at Morgantown, West Virginia, on April 2, 1929.

Upon the completion of the state organization, plans were laid for admission into the American Medical Association, and the records show that Dr. John C. Hupp and Dr. J. W. Ramsey were the official representatives—delegates, we now say. Also there were present, as accredited delegates and permanent members, "Dr. M. Campbell, Dr. John Frizzell, and Dr. E. A. Hildreth (I)."

At this national meeting was also reported The Wood County Medical Society, by Dr. Resin P. Davis, as delegate; but no date of its organization is given. The Wood county society is the second of which we find any record.

After the permanent organization, the state society held annual meetings—1868 in Grafton, April 1st and 2d, when Dr. H. W. Brock was made president for the ensuing year. The 1869 meeting was held in Clarksburg, June 1st and 2d, and favorable expression was made as to the further formation of county societies. At the Clarksburg meeting, Dr. J. W. Ramsey was made president for the following year, the meeting to be held in Parkersburg the first Wednesday in June.

Further records were not readily found, but regular yearly meetings were doubtless held up to the third period, 1901.

Third Period, 1901.—The American Medical Association, at its St. Paul session, passed resolutions and revised the constitution, providing for reorganization of state medical societies and establishing the county society as the component part of the state organization and the necessary step or unit of membership in the state and national organizations. At this St. Paul session, The West Virginia Medical Society was represented by Dr. A. H. Thayer and Dr. W. P. Goff as delegates.

The revised constitution and by-laws of the St. Paul session was referred to the state organizations for adoption, which took some time. In West Virginia, the resolution of adoption was passed on the third day of our 1902 session, held in Parkersburg—thirty-fifth session.

One state organization, which has a charter one hundred years old, granted by its state, still holds its rights, as reported from the American Medical Association office recently. However, the constitution and by-laws adopted at the Parkersburg meeting was practically the same as those we now operate under, and at our 1905 session it was resolved that the component county society be the required and only step of entrance into the state association. Please note that since 1902 the county organization is "Society," and the state and national organizations are "Association." Provision was reasonably made for such localities as did not have county societies, urging that a union be made with another county or society, and we have gotten on fairly, and with no serious hardships, and with gradually increasing interest and profit.

In this reconstruction period the Monongalia County Medical Society was organized. In 1902, when the following named physicians of our county met at a call in Morgantown and made application to our state association for a charter under the name of the Monongalia County Medical Society, adopting the constitution and by-laws and the medical code of ethics as prescribed by the national association, and accepted by our state association in 1902 as already stated. Charter members were:

Drs. Brock, Bush, James A. Cox, Edmondson, Gardner, Gibbons, Haught, Claud Holland (now of Fairmont), Simpson, Sivey, and Wade.

The writer is pleased to designate this charter meeting the first peace conference of medical men ever held in Monongalia county, and it was the beginning of better things medically, just as peace conferences in more recent years have resulted in better relations of all parties to such conferences—enlivened mutual interest and therefore enlarged mutual benefit—all as a result of wider application of the Golden Rule.

Organization was effected as follows:

President, Dr. S. S. Wade; vice-president, Dr. Gardner; treasurer, Dr. Haught; secretary, Dr. Sivey.

Other offices were filled later. Meetings were held with some regularity; but then, as now, a quorum too often was not present. The business was carried on in a fairly satisfactory manner, mostly by gratuitous work on the part of the members; but, by taking turns, this work was not made too irksome.

The program and entertainment consisted of papers by the members on subjects of general interest to practitioners and therefore of profit to our community.

Then followed a free exchange of experiences and opinions—a general get-together, which was a fine spirit, with an occasional smoker, and very occasionally some refreshments. Then, as now, we met in places offered us without cost. Some day we will have our own home.

In that early day the City Hospital Association was organized, mostly by members of the medical society, but entirely independent, as was also the

Ladies' Hospital Auxiliary Association, and it, too, was independent of the county medical society. As our population grew and the number of medical men in our county increased, our society has grown by four hundred per cent.

In early times we had an occasional meeting with our dentists—more frequently then than now, perhaps—but the day has surely gone by when medical men and dentists can consider themselves unrelated, for each is dependent upon the other to a very large degree, and we believe that an interne dentist would be of much aid to medical men in our hospitals, and we feel favorably inclined toward the "convalescent cottage" plan in connection with a hospital, as a means of speeding up return to normal health.

We further believe that a "day nursery," established at hospitals, would enhance, in a large way, the benefit of our hospitals to their communities—a special care of the infant during the day by physician and nurse, and food supply for the night, prepared by the nurse and sent to the home, is a workable plan, without much extra expense; and then, too, let us not forget that in early life is the time to lay the foundation for good health in after years; for it has been well said that the biggest asset of the state is the good health of its citizens, and so it appears that our health organizations and our educational systems should go hand in hand. If we could have, annually, a Health Day for our public schools, under the auspices of the University Medical and Physical Education departments, our students would be much benefited thereby.

In closing, may we say that "Making for the Utmost in Human Progress and Safety" is the slogan of organized medicine today?

The writer desires to express obligation to Dr. W. W. Golden, Dr. F. L. Hupp, Dr. Olin West, and Mr. Joe Savage, for copies of records and other information, all of which have been very helpful to him.

Observations in Duodenal Ulcer

As a result of his experience, Edward L. Jenkinson, Chicago (*Journal A. M. A.*, Dec. 1, 1928), believes that the following conditions are at least suggestive of early duodenal ulcer: (1) An irritable and spastic duodenal bulb which has a tendency to stay empty. (2) Difficulty in keeping the bulb filled in order to observe it closely. (3) The ability of the bulb to fill and to become regular in outline under pressure with the examining hand. (4) Temporary spasm of the pyloric antrum, the antrum being regular in outline. (5) Peristaltic waves, which may be active in some cases and normal in others. (6) Puddling or overflowing in the second part of the duodenum. One should not let the röntgenographic evidence outweight the fluoroscopic observations. It is well to have the courage of one's convictions.

Tuberculosis Association Meets

The eighth annual meeting of the West Virginia Tuberculosis and Health Association was held at Parkersburg on May 1 and 2 and was attended by eighty delegates, representing twenty-three counties. The featured speakers from outside the state were Dr. Walter L. Rathbun, superintendent of the Newton Memorial Hospital, Cassadaga, N. Y., and Dr. H. E. Kleinschmidt, director of the health education service of the National Tuberculosis Association.

Dr. Rathbun gave a report of his chest examinations of over 23,000 children in the junior and senior high school grades in Chautauqua county, and illustrated his findings with a large number of x-ray pictures projected on a screen. His work indicated that for every 1,000 students examined 1.3 per cent were found to have tuberculosis of the lungs either in a healed or active state. He explained that these children were examined without reference to symptoms, signs of disability or exposure to tuberculosis, and stated that approximately nine times as many cases were found among contacts as among those who denied exposure to the disease. He also pointed out that a relatively large percentage of tuberculosis was found among athletes engaged in the major sports.

Dr. Kleinschmidt's address was devoted entirely to an explanation of the types of service programs necessary for state and county work in any attempt to control tuberculosis. His outline was arranged so that a program could be adapted from it to apply to any county situation.

At the annual dinner, presided over by Dr. David Littlejohn, representing the State Health Department, an interesting paper regarding the relationship between the medical profession and volunteer health agencies was read by Dr. Harry M. Hall, president of the West Virginia State Medical Association, who illustrated some of his ideas with humorous stories that drove home the points he desired to make.

Dr. J. G. Pettit, superintendent of the State Tuberculosis Sanatorium at Hopemont, explained the work being done at that institution, and used a

large number of lantern slides which had been made especially for the occasion.

Dr. John Thames, director of the Kanawha County Health Unit, read an interesting paper dealing with the modern methods of handling the problem of tuberculosis control, in which he emphasized educational activities and the necessity for more clinics for the purpose of early diagnosis.

Dr. S. M. Prunty, of Parkersburg, gave an address on sanitation and housing, in which he called attention to the importance of preventive and protective measures in anti-tuberculosis and other health work.

Dr. O. F. Covert, of Moundsville, medical director of the Marshall County Tuberculosis Sanatorium, described the educational, clinic and supervisory activities that have been necessary in promoting the work of the sanatorium successfully and gave a financial statement of the cost of operation of the sanatorium.

At the business session of the association the following physicians were elected to membership on the board of directors: Dr. G. H. Barksdale and Dr. R. D. Roller, Charleston; Dr. J. G. Pettit, Hopemont; Dr. Robert Wriston, Beckley; Dr. J. F. Bigony, Hinton; Dr. S. M. Prunty, Parkersburg; Dr. G. R. Maxwell, Morgantown, and Dr. Harry M. Hall, Wheeling.

At a meeting of the board of directors the following officers and executive committee were elected to serve until the next annual meeting: President, Dr. J. G. Pettit, Hopemont; vice-president, Mr. Frank Townsend, Parkersburg; recording secretary, Mrs. James B. Moran, Grafton; treasurer, Mr. Walter McNeal, Charleston; executive committee, Dr. G. H. Barksdale, Charleston; Dr. Walter E. Vest, Huntington; Mr. D. A. Taylor, Wheeling; Mrs. S. W. Price, Scarbro, and Mrs. S. M. Kendall, Elkins. Mr. George C. Rowell continues as executive secretary of the association.

The Cigarette War

Definite opposition in congress and in state legislatures, steps taken with the Federal Trade and Federal Radio commissions, organized movements in churches and in welfare societies and sweeping condemnation by medical and advertising opinion against the American Tobacco Company's attack on sweet foods, are described by the National Food Products Protective Committee in its latest bulletin to manufacturers, distributors and trade associations.

The entire food industry has been aroused, the committee reports, by the American Tobacco Company's campaign to substitute its cigarettes for wholesome food products. Conferences and correspondence with twenty-five trade associations, letters to more than 5,000 leading manufacturers, articles and editorials in 150 trade publications and over 1,000 newspapers, and local meetings throughout the country have resulted in action by thousands of retail druggists, grocers, confections, bakers, and other food distributors. Almost every branch of the sweet food industry has contributed toward the support of the committee's work. Restaurant and hotel interests have from the start taken a leading part in the fight.

Health Education

The greatest problem of the health movement today is the gap between performance and possibility in the use of available knowledge, declares Dr. J. Howard Beard in a critical article in *Hygeia*. The long process of creating sentiment to gain public support and legislation constantly widens the zone between what can be and what is being done for health protection.

One reason for the slow progress of health measures is the willingness of the average man to take the advice of the butcher, baker, the candlestick maker or any one else in health matters. In fact, the opinion of neighbors is often given more weight than that of the surgeon-general of the United States Public Health Service, the director of the state department of health, the local health officer, and other recognized officials.

A second obstacle is the myopic mind that resents being taxed for health promotion. Such a mind can not see the benefits of eradicating communicable disease everywhere. A community not only loses directly by illness of its people, but outsiders go elsewhere to live and to spend their money when they learn that any locality has a high sickness rate.

A third menace is the rising tide of quackery. The advances of science in recent years afford quackery innumerable chances for disguise in apparatus, method, and formula. Mankind in general seems more resistant to truth than to humbuggery. Even educated persons are victims of fraud unless they are not informed on the advances in biology, chemistry and physics. Only education can save the public from the pseudoscience of the mountebank, Dr. Beard declares.

Salmon Memorial Fund

For the first time national and international recognition is to be given to the scientist who makes the greatest outstanding contribution of the year in the field of mental medicine. Announcement was made recently by the Hon. George W. Wickersham, as honorary chairman, of the establishment of the Thomas William Salmon Memorial to accomplish these purposes, in honor of the late Dr. Thomas W. Salmon, former professor of psychiatry of Columbia University and medical director of the National Committee for Mental Hygiene.

"The plan provides for a series of lectures to be given in various cities in the United States under the auspices of accredited scientific, medical or educational organizations. Provision will also be made for the publication and distribution of the lectures from year to year in order to make possible the maximum use of scientific knowledge which is being gained annually through the expenditure of millions of dollars on research and study in the field of psychiatry and mental hygiene by state departments, universities, foundations and individuals, which is now lost or obscure and not made available as readily and quickly as it should," said Dr. William L. Russell, professor of psychiatry of Cornell University and vice-chairman of the memorial committee.

"The memorial provides freedom from academic or institutional restriction of any kind, and is intended to stimulate unrestrained research, study and expression of opinion and is calculated, in the shortest possible time, to disseminate knowledge of value in the control and prevention of mental and nervous diseases, one of the greatest public health problems of the present day."

The administration of the memorial fund is to be vested in the New York Academy of Medicine, it is a permanent and endowed establishment with national and international connections.

Pleurisy As An Early Symptom in Tuberculosis

Inflammation of the pleura is a very common affection, which may manifest itself either as a primary or secondary process. While there is no doubt that this disease exists in a true primary form, it will be the purpose of this little paper to call attention to the small relative proportion of the true primary cases to the entire incidence of the disease, and also to call attention to a misconception prevalent among a great many practitioners that pleurisy is of little consequence. This is due to the fact that a large number of cases are observed in individuals who are apparently healthy, and in whom the attack follows exposure to cold. It may be possible to produce an attack by exposure to cold or by trauma, but cases produced by these causes are so rare as to be almost negligible.

If the foregoing statements are true—and you will find that they are confirmed by most of the leading chest men in the country—then it remains that an overwhelming majority of pluerisy must be secondary to other conditions. Secondary pleurisy has two general causes: (1) through the blood stream in cases of general septicemia; (2) by extension of an inflammatory process involving the lung. Since tuberculosis is by far the most common cause of inflammation of the lung, it must follow that our conception of the seriousness of pleurisy must be revised.

There are three types of pleurisy: the fibrinous, serofibrinous, and pleurisy with effusion. These may be only different or progressive types of the same disease, tending to terminate with effusion; or, on the other hand, as many believe, it is more probable that different forms are determined by the different organisms that may play the rôle of exciting cause.

The three causative organisms in this disease are the pneumococcus, streptococcus, and the tubercle bacillus, with the latter largely predominating. Any one of these germs may be responsible, or any combination of the three.

Another reason for the rather small significance given to these so-called primary pleurisies is the fact that a great many of them subside and any future development of tuberculosis is considered as acute and the fact of its existence being the cause of the former pleurisy is lost sight of. Again, in a great many of the cases, the subsidence is permanent; but still this is not a proof that cold or trauma is the causative factor, for, when we consider that 90 per cent of all people in civilized countries have the germ of tuberculosis in their system, and a great many of them with some degree of activity, and, further, that we only have a mortality of about 10 per cent from tuberculosis, it must be a fact that about 80 per cent either have a spontaneous permanent arrestment of their tuberculosis or the bacilli have failed to produce activity.

This has led a great many men to the extreme belief that it is almost impossible to newly contract tuberculosis during later adult life, but that all such cases of development were simply a relighting of a preëxisting lesion that had healed or become inactive, and was only again made active by some of the

contributory causes, such as cold, exposure, measles, influenza, undernournishment, occupational conditions, or anything that would lower the vitality and resistance to such a degree that activity was again possible.

This conception is probably not entirely true, as we know that when tuberculosis is carried to a savage race adults contract it and a very high mortality results; but, on the other hand, this is possibly much mor enearly true than most of us can conceive.

With these facts in mind, it is very logical to say that, with no other demonstrable cause in evidence, the pleurisy is almost certain to be tuberculous.

Along with minimizing the seriousness of pleurisy there is another factor that contributes largely to our failure to give our patients the best possible advice, which they have a right to expect, and that is the failure to make a proper diagnosis. Many patients are told that their pain is due to intercostal neuralgia, angina pectoris, or simply an irritated condition of the lung, when the real cause is tuberculous pleurisy.

Considering this latter fact, it might be well to review briefly the symptoms that point to this condition, and, if possible, how to distinguish its various forms.

Acute pleurisy, which is usually the more severe, is ushered in with sharp pain, a chill or chilliness and a varying degree of fever which usually lasts until subsidence of pain and sometimes even beyond this point; the pulse rate is increased and the respirations are accelerated, but not to the degree of dyspnea in the early stages. The pain is intensified by coughing an dheavy breathing, therefore the cough is hacking and the inspiration shallow, from an effort to minimize pain; the friction rub is usually heard at this stage, but there is no dullness on percussion. If effusion takes place, dyspnea develops, the pain ceases, and a definite dullness is heard on percussion.

The onset may be insidious, but usually there is a slight accompanying fever with its attendant malaise and headache.

If effusion develops, it may be purulent or serious, but the nature of the effusion can usually only be determined by the use of the exploratory needle. This should be used, since it is very important to know the nature of the contents of the pleural sack.

Pleurisy, therefore, becomes a very important early symptom, and, if nonpurulent, should always be considered tuberculous unless it can be proven otherwise.—*C. H. Hall, M.D., in Bulletin of the Davis Memorial Hospital, Elkins, W. Va.*

Cod Liver Oil

The discovery of at least two specifically potent food factors, vitamins A and D, in cod liver oil within comparatively recent years, has completely altered the attitude of scientific investigators, and laymen as well, toward this product that long had a place in dietotherapy on the basis of essentially empirically founded impressions. It is true that cod liver oil functions as a readily digested and utilized fat and thus as a source of energy; yet an ounce yields little more than 250 calories. So far as present knowledge is concerned, the vitamin content of cod liver oil constitutes its chief claim for consideration in treatment.—*Journal A. M. A.*

Broadcasting Medical Advertising

The promoters who travel the borderland between honesty and quackery, raking in the shekels of the unwary, have found in radio broadcasting a glorious accessory for their manipulations. The mutterings of mystics from India and of fortune tellers from France, the claims for hair growers from Austria, for magic horse collars, for radium drinking waters, for antiseptics, cosmetics, influenza and cancer cures, the sexual appeals of rejuvenationists, the mouthings of evangelistic and faith healers, and preposterous dietary schemes come pouring from the loudspeakers. At a conference held in Chicago by representatives of the broadcasting stations, the Better Business Bureau, and the American Medical Association, the following resolution was offered: Station directors should keep alive to the fact that all broadcasting is listened to by all members of the family circle, and that nothing should be broadcast that is in poor taste, embarrassing or offensive when heard by all members of the family. The combined action of the radio broadcasting industry and the Better Business bureaus of the nation should lead promptly to control, indeed to actual sanitation, of medical radio advertising.—*Journal A. M. A.*, Feb. 9, 1929.

New Physician Joins Montgomery Clinic

The Montgomery Clinic and Coal Valley Hospital has recently announced that Dr. Edward I. Davies is expected to arrive during the next week to have charge of the eye, ear, nose and throat department. Dr. Davies, after graduation, spent five years in general practice. He then spent a year at the Eye, Ear, Nose and Throat Hospital at Pittsburgh, and has just returned from sixteen months' study in Budapest and Vienna.

The Snek-Wun-On Fraud

The device consists of a piece of rubber shaped somewhat like the male sexual organ, the rubber being reinforced by a piece of metal running through its length, which, in turn, is fastened to a rubber ring or collar to be slipped over the male sexual organ. The device is used as an "auxiliary" to the male sexual organ. The device and literature for it were examined by a medical expert, leading to the conclusion that the device would not and could not accomplish the results claimed for it. The post office authorities issued a fraud order against the Snek-Wun-On Company and A. Rogainat, sales manager, but, for some reason, the order was not extended to the man who was the proprietor of the business—J. G. Deynzer. — *Journal A. M. A.*, Feb. 2, 1929.

An Anesthetic Accident

Recently, at Evansville, Ind., a tank of nitrous oxide exploded, killing an anesthetist, maiming his attendant, and wrecking several rooms. There was no tank containing ethylene in the room. The nitrous oxide tank was not attached to the machine. It has been *assumed* that the nitrous oxide tank contained some ethylene. This presumably gained access to the nitrous oxide cylinder when, at some previous time, the tank had been suspended from the yoke of an old-time anesthetic machine, so constructed that a mixture of the two gases would occur if the valves were left open. The accident occurred probably as a result of a mixture in the tank of these two gases, notwithstanding the ample warning given years ago regarding the use of ethylene.—*Journal A. M. A.*, February 9, 1929.

Lesser Slim Figure Bath

During the past few months there has been put on the market a preparation sold under the name of "Lesser Slim Figure Bath," which is described as "The Sensation of Europe" that, by its "mysterious action," will reduce the weight of the fat "regardless of your diet." It comes from Berlin—if one is to believe the advertising—and is the invention of Herr Felix Lesser, who, it is claimed, submitted "his remarkable discovery" to "the eminent Dr. G. Braun of Berlin." The eminent doctor's report is part of the Lesser Slim Figure Bath advertising. An American company has been formed—The Lesser Company, incorporated under the laws of Illinois with John J. Mitchell, a prominent Chicago banker, as treasurer. The *Chicago Tribune* has advertised the preparation, although its health editor informed a correspondent that he knew of no substance used in baths which will reduce weight. The Lesser Slim Figure Bath comes in the form of a package of white, highly scented, effervescing powder in which there is a large compressed tablet that also effervesces. The instructions are to fill the bath tub with hot water, empty the contents of the package into the tub and stir well, yet into the tub and and place the tablet "under your back." From its analysis the A. M. A. Chemical Laboratory concludes that a product having essentially the same properties as the bath powder may be prepared by using: cornstarch, 7 parts; borax, 1 part; baking soda, 1 part; tartaric acid, 1 part; strongly odoriferous perfume. The laboratory found from its analysis that a tablet having essentially the same composition as that of the Lesser tablet may be prepared by using: baking soda, 1 part; tablet salt, 6 parts; tartaric acid, 3 parts; talc, as binder. Every physician knows that this absurd mixture can not have the slightest effect in the reduction of weight. —*Journal A. M. A.*, Feb. 9, 1929.

High-Caloric Diet

In discussing diet applicable in inflammatory diseases of the intestines, and taking up the subject of rest of the bowel in disease of the gastrointestinal tract in general, George E. Knappenberger, M.D. (*American Medicine*, November, 1928), states that we must consider a diet from the standpoint of food value, amount of residue, laxative properties, digestibility, fermentative and putrefactive qualities, coarseness, muscle, nerve or chemical irritability. Sufficient carbohydrates, proteins, fats, water, salts and vitamins must be supplied. The greatest number of calories with the least residue is important. The diet must be appetizing and not monotonous. Irritating foods, because of too much bulk in residue, excessive laxative action, coarseness, and general indigestibility should be omitted. Vegetables, some fruits, various condiments and indigestible substances such as olives, pickles, husks, rinds, etc., come under this head. Fried foods, excess fats, coffee and tea, iced drinks, hot breads, and sweet milk should also be excluded. In this connection, a detailed ménu is given. Proper nourishment in intestinal disease is important. A low residue diet is indicated in any intestinal inflammation, irritation or infection. The diets suggested are those that should be chiefly "absorbed before reaching the colon, thereby reducing peristalsis and irritation."

Mouth Washes and Dentifrices

Nowhere is scientific thought and even honesty more disregarded than in the pseudobiochemical propaganda inseparably connected with the exploitation of dentifrices and mouth washes. Consider, for instance, what advertising writers are pleased to term "acid mouth." It is well known, but not often admitted in the propaganda of certain dentifrice manufacturers, that the PH level of the saliva is maintained regardless of the material introduced into it. Dentifrices of both acid and alkaline nature are sold with the claims that they will correct all sorts of supposed conditions in the mouth. Many of the alkaline dentifrices, presumably designed to correct mouth acidity (which, in a sense, is the normal condition), are especially blatant in their announcements. If an abnormal acid or alkaline condition is present in the mouth, there is probably an underlying constitutional cause which should have the expert attention of physician and dentist. Sooner or later, manufacturers of dentifrices will have to heed the results of scientific investigation. The chief purpose of a dentifrice is to clean the teeth, or, more practically, to establish a healthy habit. The balance of evidence is against the view that dentifrices can be used for so-called mouth correction.—*Journal A. M. A.*, March 16, 1929.

Ethylhydrocupreine Base in Pneumonia

Ethylhydrocupreine, introduced as optochin, appears to be a specific agent against the pneumococcus. It is, however, so much less efficient against other microörganisms that, in an influenzal pneumonia due to any other organism than the pneumococcus, ethylhydrocupreine would not be of any use. Even in pneumococcus infection, one could hardly call ethylhydrocupreine an ideal remedy. To have any effect it must be given in the largest dose tolerated and at the earliest possible moment. Its worst feature is its tendency to produce optic neuritis. To prevent this, the technique has been elaborated of giving ethylhydrocupreine base with milk.—*Journal A. M. A.*, Feb. 23, 1929.

Hay Fever Cure

The Smith-Ernster Laboratories, Inc., of New York City, exploit a "patent medicine" known as "Ercolin." Ercolin is said to be the "result of six years of intensive research" made by Dr. Nicolas Ernster. Ercolin is described as an "entirely new physiological compound," which reacts on the protein of the pollen, thereby neutralizing the effect of all pollens." From the examination made in the A. M. A. Chemical Laboratory we learn that this "marvelous remedy," perfected by the "eminent Boston scientist," Nicolas Ernster, Ph.D., as the result "of six years of effort," is nothing more wonderful than a weak solution of gallic acid in dilute glycerine!—*Journal A. M. A.*, Feb. 23, 1929.

Civil Service Examination

The United States Civil Service Commission announces an open competitive examination for bacteriologist. Applications must be on file with the Civil Service Commission at Washington, D. C., not later than July 3.

The examination is to fill a vacancy in the United States Public Health Service, Honolulu, Hawaii. The entrance salary is $4,000 a year; higher-salaried positions are filled through promotion. The duties are to carry on bacteriological investigations and research on matters pertaining to the public health.

Competitors will not be required to report for examination at any place, but will be rated on their education, training, experience, and fitness, and on publications or a thesis filed by the applicant.

Full information may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the United States Civil Service Board of Examiners at the post office or customhouse in any city.

WOMAN'S AUXILIARY

Tri-State Meeting

The doctors' wives who attended the recent Central Tri-State Medical Society meeting at Portsmouth, Ohio, on May 16, were amply repaid for their trip there. A definite program was worked out by the doctors' wives of Portsmouth, and all of the visiting ladies were entertained during their one day's visit to the Ohio city. The visiting doctors' wives assembled at the Masonic Temple at one o'clock and were specially conducted on a trip through the large Selby shoe factory at Portsmouth.

Later in the afternoon, the visitors were taken on an automobile sightseeing tour of Portsmouth and vicinity, and at 3:30 o'clock in the afternoon they were entertained at a bridge-tea at the home of Dr. and Mrs. George Martin on Timlin Hill. They also attended the Masonic Temple banquet at 6:30 P.M.

The West Virginia Medical Journal

Directed and Edited by the Committee on Publication

[The Committee on Publication is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible]

JAMES R. BLOSS, *Editor-in-Chief* - - - - - - - - Huntington

ASSOCIATE EDITORS:

WALTER E. VEST, Huntington — HARRY M. HALL, Wheeling — J. HOWARD ANDERSON, Marytown — C. A. RAY, Charleston

MR. JOE W. SAVAGE, *Secretary-Business Manager*, Charleston

Entered as Second Class Matter, January 1, 1926, at the Postoffice at Charleston, West Virginia

Vol. XXV — JULY, 1929 — No. 7

CARDIAC ARRHYTHMIAS *

By MILTON C. BORMAN, M.S., M.D.
Montgomery, W. Va.

In considering the clinical disorders of the heart-beat, it is my intention to confine this discussion to a simple statement as to their significance, detection, and treatment.

Sinus Arrhythmia. — There are five different kinds of sinus arrhythmia. The commonest variety is a waxing and waning of the heart-rate synchronously with respiration. This is noted particularly in children and in dogs. This same kind of rhythm may be noted independently of respiration. A third variety consists of a mixture of short and longer pauses indiscriminately mixed, usually associated with a slowing of the heart-rate. The fourth consists of a marked slowing of the cardiac rate to 40 or 50 per minute, with an independent fall in blood-pressure, accompanied at times with fainting. Rarely there may be a sudden and prolonged cessation of the heart-beat, usually associated with syncope. These irregularities are due to alterations in vagal tone. They are of no significance, with the exception of the rare types associated with syncope. They may be further recognized by the fact that they disappear with exercise or fever, or after atropin or amyl nitrite, and may be accentuated by forced respiration in many instances. There is no treatment.

Heart Block.—This serious abnormality is not always recognized clinically. It may be recognized many times by the polygraph and always by the electrocardiograph. Clinically, an increased conduction time through the *a-v* node will be detected by a reduplication of the first or second heart sound produced by normal auricular systole. An apical thrill, a rough early or mid-diastolic murmur, with a regular pulse, suggest not only mitral stenosis but also heart block. The condition is also to be suspected whenever the cardiac rate drops to 40-to-50. Single dropped beats may be detected by feeling the pulse and noting that there is no cardiac contraction during the pause. A sudden halving of the ventricular rate is very suggestive. A cardiac rate of 35 or less usually signifies complete block. Definite recurring varying intensity of heart sounds in slow and regular hearts independent of respiration is a conclusive sign of heart block. A split apical impulse has been noted.[1]

Heart block signifies disease of the heart muscle, a serious defect, usually of rheumatic, luetic, or degenerative origin. It may result from an acute infection such as diphtheria or scarlet fever, or it may follow the administration of digitalis.

Heart block itself does not kill. It is the associated heart-muscle disease which is significant, and we must treat the underlying etiological factors.

CASE I.—This patient was sent to the hospital for a hemorrhoidectomy. The physician examining him at our clinic noted markedly subnormal intensity of the heart sounds. He is fifty-five years old, and had

* Read at the third heart conference of the Montgomery Clinic, Montgomery, West Virginia, December 12, 1928.

complained of dyspnea while at work in the mines. Further careful study revealed no cardiac enlargement. Teleoröntgenogram measurements were: M.L. 10.5 cm.; M.R. 3.7 cm. Internal thoracic diameter 29.2 cm. Heart suggestively boot-shaped. Blood-pressure 126/78, left arm lying down with a mercury manometer. There were no murmurs, friction rubs or arrhythmia. An electrocardiogram revealed left branch bundle block as shown in the tracing (Fig. 1). The hemorrhoids subsided during hospitalization. Patient has given up his work in the mines, and has no complaints. No digitalis is being

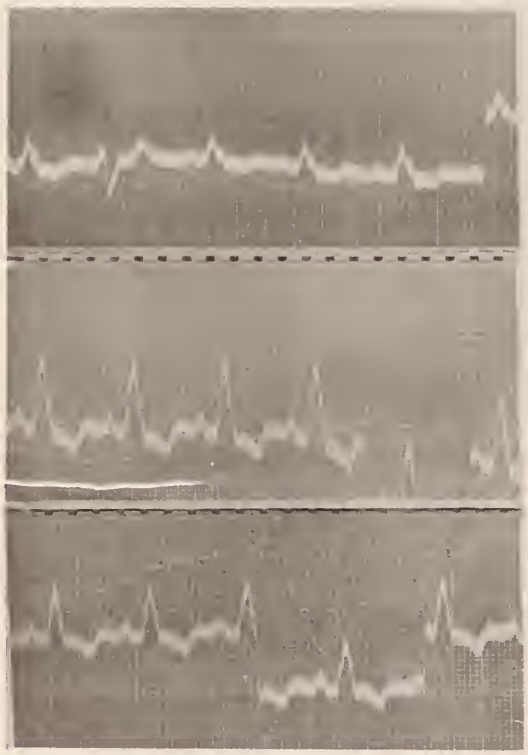


FIG. 1. Electrocardiographic tracing of a patient with left branch bundle block. (Note the increased width of the *qrs* complex and the slurring of "R" in all three leads, the inversion of T^2, and the apparent right ventricular preponderance.)

given this man. Although there is no evidence of an increased *p-r* interval (that is, the time it takes the impulse to pass from the auricles to the ventricles, there is no indication for the use of the drug. The Wasserman and Meinicke blood examinations were negative.

One of the interesting features in this case was the clinical diagnosis of "myocarditis" based upon the subnormal intensity of heart sounds. In listening to heart sounds, it is advisable to divide them into their component parts and note the rate, rhythm, pitch, duration, and intensity. This was apparently done by the examining physician, and it focused our attention upon the heart. The actual lesion was not diagnosed until an electrocardiogram was obtained. We have found it advisable to obtain electrocardiograms upon each patient forty years old or older in whom there is likelihood of operation, even when there is no definite indication for the tracing.

Premature Contractions or Extrasystoles.—The normal rhythmical sequence of pulsations in the radial pulse may be interrupted by the early appearance of a pulsation followed by a longer than normal pause. There may be what seems to be a dropped impulse, but careful timing may reveal the fact that the pause is not twice the length of the pause between two normal pulsations. Auscultation over the precordium in both instances discloses a cardiac contraction occurring prematurely and followed by a compensatory pause. While not serious in itself, this condition is frequently associated with serious lesions. If the extrasystoles occur very frequently they increase considerably the work of the heart, and may become serious. In general they are of little prognostic value.

CASE II.—A white girl, aged seventeen, was admitted to the clinic, complaining of heart trouble and appendicitis. There had been occasionally sharp precordial pain referred into the left arm, with occasional precordial fluttering sensations. There was slight dyspnea on moderate exertion. She stated that she had had heart trouble for years, one physician advising her that she had a double heart murmur. She had had measles, mumps, whooping cough, chickenpox, scarlet fever, typhoid fever, pneumonia, and influenza. There had been frequent sore throats, but no other possible rheumatic chain infection. She was undernourished. Her pulse seemed absolutely irregular. There was a pulse deficit. Precordial auscultation revealed two, three or four normal contractions with normal intervals following by long pauses. A heavy pyoid material exuded from the cervix. Three cervical smears were negative for gram negative cocci. The Wasserman and Meinicke blood tests were negative. The electrocardiograms revealed frequent right ventricular extrasystoles. This rhythm, clinically, might have been very confusing if there had not been an apparent dominant rhythm. The acute infection of the cervix may have accounted for a mild toxemia producing premature cardiac contractions, although they are probable due to changes subsequent to rheumatic infection.

Simple Paroxysmal Tachycardia.—In this condition the normal heart rhythm is interrupted by a series of rapid and regular beats varying between 100 and 220. It is recognized by the sudden onset

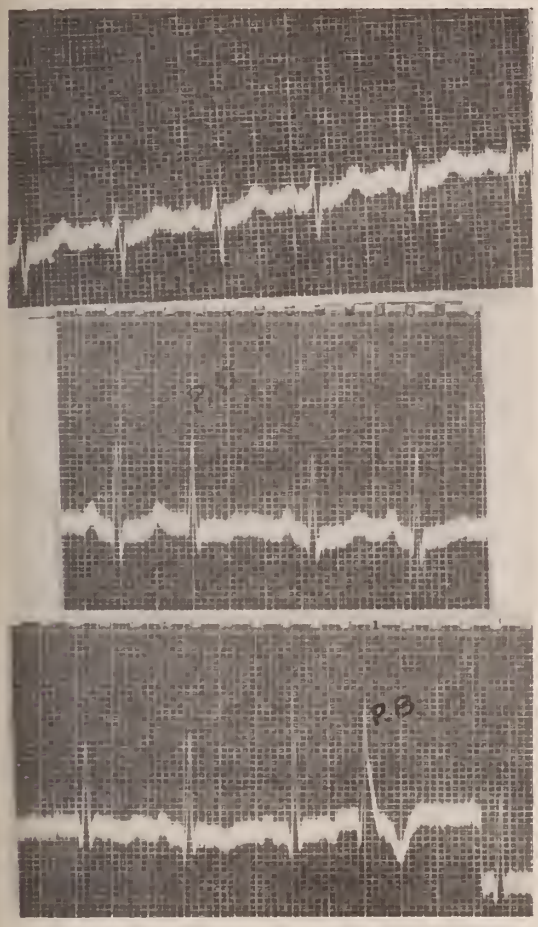


FIG. 2. Electrocardiograms showing occasional premature beats marked P. B.

and equally sudden offset, and by noting that there is not the slightest change in rate when the patient passes from the upright to the recumbent posture during an attack. Death has occurred during an attack, but it is exceedingly rare. A great variety of procedures have been utilized therapeutically. An ice cap to the precordium, assuming unusual postures, pressure on the vagus nerves, drinking ice-cold fluids, and pressure in the epigastrium have been useful in stopping the attack. The patients, themselves, are frequently aware of what measure may be adopted if there are recurrent attacks. Quinine sulphate has been used intravenously.

Auricular Flutter.—In this condition the impulse follows a regular circular pathway through the auricles at a rate between 260 and 320 per minute. It is occasionally recognized in the middle-aged or elderly patient because of a regular and persistent ventricular rate of 130–160. There is no other clinical or bedside method of detection except with the polygraph or electrocardiograph. While no exact pathological changes have been found constantly associated with this form of rhythm, and because, once established, the rhythm is frequently restored to normal, the condition should not be treated lightly. It would seem that the persistent ventricular tachycardia in the course of time would lead to fatigue, and, if pushed still further, serious results might follow.

CASE III.—An attorney, 53 years old, was admitted to the hospital with cardiac decompensation of about three weeks' duration, which had gradually been increasing. His physicians feared a fatal outcome if digitalis was used. The patient stated that he had had a rapid heart frequently as high as 150 with a perfectly regular pulse since his student athletic days at Washington and Lee. The tachycardia bore no relation to activity or any other known factor. A fat-free tincture of digitalis in drachm doses was given every six hours. The patient gradually improved. Diuresis followed. An absolute cardiac arrhythmia developed. Digitalis was discontinued, and a normal cardiac rhythm developed. The patient returned home for seven weeks' rest after about three months' hospitalization. He gradually returned to his duties. I saw him at fairly frequent intervals during the following eighteen months. He had cut his weight down from about 220 pounds to 186, and carried on his work in perfect comfort. His heart-rate occasionally rose to 100, although most of the time it remained in the neighborhood of 80. He continued taking fifteen minims of tincture of digitalis twice a day. Suddenly, during excessive emotional strain, he became cyanotic, breathless, and expired.

Although we have no electrocardiographic studies of this patient during his attacks of flutter, the accompanying tracing was obtained during his convalescence (Fig. 3), while under treatment with digitalis. There is a depressed S-T interval. Frequent premature beats of apparent sino-auricular nodal origin are noted. There is slurring in all leads although it is only slight in leads one and two. In lead three the notching is near the base line, and in this tracing it is of questionable significance.

Auricular Fibrillation.—In this condition, the impulse follows an irregular circular pathway in the auricles at a rate of about 450 per minute. It is recognized by the absolute arrhythmia of the pulse,

an irregularity in the volume of successive radial pulsations, and an irregularity of interval between them. It may be recognized by simple palpation of the pulse, in a large majority of cases. Occa-

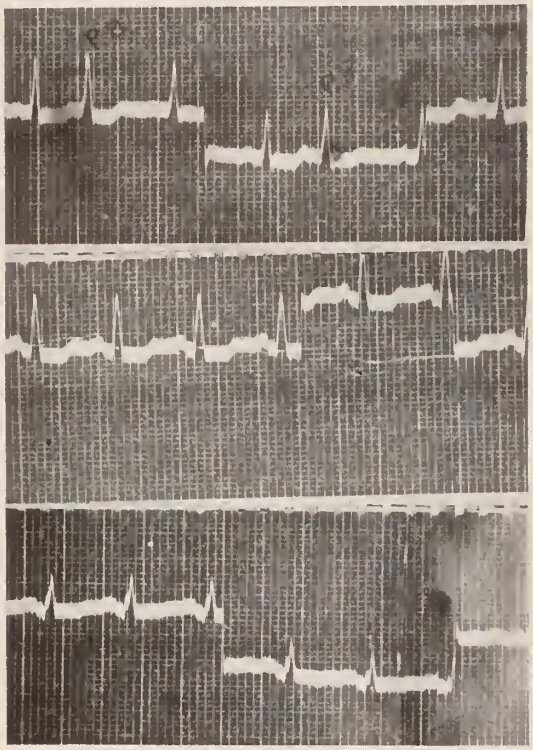


FIG. 3. Electrocardiogram of a patient who had previously shown auricular flutter. Note the depressed S-T interval due to digitalis and the coupling in lead one due to premature contractions.

sionally, it will be confused with very frequent extrasystoles. Auscultation over the precordium will assist in differentiating the two conditions, although occasionally the polygraph or electrocardiograph will be necessary. The condition is significant because it means damage to the heart muscle. It is found in the acute infectious diseases, such as pneumonia, as the result of severe myocardial damage following rheumatic infection, and following degenerative processes, as the result of coronary sclerosis.

Treatment, in so far as drugs are concerned, centers around digitalis and quinidine sulphate. In hospital cases, Eggleston's digitalis dosage may be used. This method should be considerably modified when ambulatory or home treatment is undertaken. The dosage of digitalis depends upon the general condition of the patient and whether or not decompensation has occurred. In determining the amount of the drug to be used, we multiply 0.15 by the weight of the patient in kilograms to obtain the number of cubic centimeters of a fat-free tincture of digitalis considered necessary to thoroughly digitalize the patient. This amount should be given in divided doses during the course of about 72 hours, remembering that the average patient excretes about 20 minims per 24 hours. Therefore, in order to retain the effect of digitalis once the heart has been slowed, we must continue giving 20 minims per 24 hours. It is advisable to use a fat-free, clinically proved tincture. The patient should be given a minim measure or a medicine dropper which has been specifically calibrated with a tincture of digitalis solution. We should know the exact number of drops of digitalis in terms of minim dosage, using the specific dropper provided the patient for this determination. We should proceed cautiously in prescribing digitalis in those cases that have been taking digitalis preparations during the preceding ten days. In using quinidine sulphate, a preliminary tablet of two grains should be used to determine whether or not the patient is sensitive to the drug. The dosage is five grains every four hours, omitting only one night dose. In about fifty per cent of the cases normal rhythm will be restored. This is usually accomplished in a few days. There are certain dangers, however, in quinidine therapy, and the treatment should be carried out in a hospital.

CASE IV.—This patient, a white male, fifty-four years old, consulted me at the clinic five months ago, complaining of epigastric pain, flatus, and muscular weakness. For two years he had complained of cardiac flutter. There has been no rheumatic or luetic history. Examination revealed fibrillating auricles, confirmed by the electrocardiogram (Fig. 4). He has a prolonged diastolic blow, heard best in the fourth interspace about four cm. to the left of the sternum. The teleoröntgenogram which you see here shows a definite bulge in the left auricular region in place of the normal concavity. The heart measurements are: M.R. 5.2; M.L. 12.3; D′ G 14.9; longitudinal diameter 18.8; O. G. 7.5 G G′ 12.5; G′ D′ 15.2; D′ D 10.8. The röntgen diagnosis of the heart is mitral stenosis and diffuse enlargement. This patient was placed on tincture of digitalis and there was marked improvement. His auricles continued to fibrillate, however. It was decided to try quinidine sulphate, even though the patient refused hospitalization. Two grains produced no change. Five grains were taken four hours later. Patient experienced a queer sensation about his heart and stopped taking the drug. He returned, and was advised to try the drug once more. He did, with the

same result. He continued taking the medication for about five days. The heart became rapid, he felt weak again, and consulted another physician. He has been taking atropin sulphate orally for the past several days in grains 1/150 doses. It is probably expected that, in the dosage prescribed for this large man, only the early stimulatory effects of the drug on the vagi will be obtained. This would be only a transient effect, however. We are suggesting to his physician to place him on digitalis of sufficient dosage to keep his rate down to about 80 per minute. Curiously, although still fibrillating, his rate tonight is only 90, and he has had no digitalis for more than a fortnight.

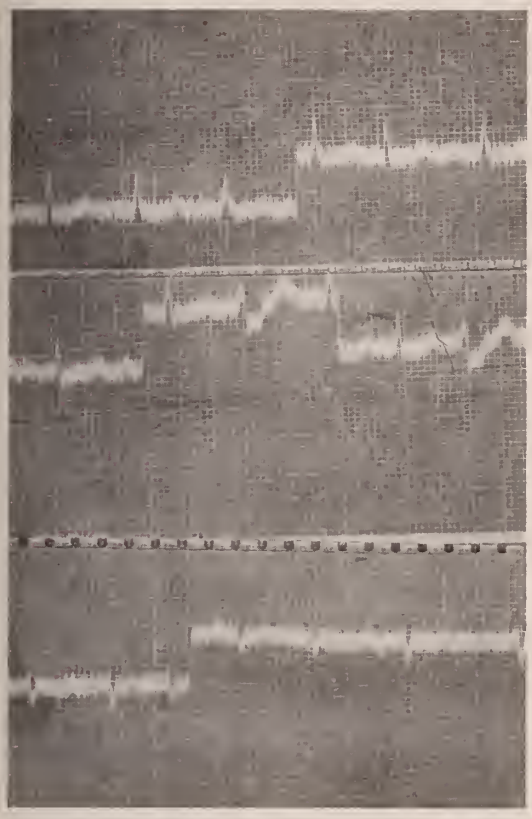


FIG. 4. Electrocardiograms of a patient with auricular fibrillation. Note the varying intervals between cardiac cycles and the irregular oscillations of the tracing due to rapidly and irregularly recurring P waves. There is also low voltage, suggesting poor cardiac nutrition.

Alternation of the Heart (Pulsus Alternans).—In this condition the heart expels varying amounts of blood, large and smaller, at alternate contractions. It is detected by palpation of the pulse, and by the auscultatory method with the sphygmomanometer. It is an ominous sign, patients living only a few months or a few years. The treatment is only symptomatic.

The type of pulse alternation just described is what we usually mean when we speak of pulsus alternans, which I would prefer to call pulsus alternans regularis maximus. Occasionally, only a variation of six or eight millimeters of mercury will be noted in alternating pulsations, although the alternation is regular. This alternation will not be detectable by the palpating fingers. This I would call pulsus alternans regularis minimus. There is a third variety which I have observed which occurs independently of respiration, pulsus alternans irregularis minimus, in which there is an irregular variation in strength of successive pulsations. When the blood-pressure is taken, the cuff is pumped up well beyond the limit at which the first sound comes through. The pressure is slowly released. When the first sound is heard, the pressure is held at that point. Only an occasional pulsation will be heard. Gradually, as the pressure is slowly released, more sounds will come through until at a point eight to twenty points below where the first come through, all of the sounds will be heard. Careful auscultation will reveal varying intensity at the upper level where all sounds are heard. I have observed this type of alternation most frequently in hypertensive patients, and its prognosis is by no means as grave as the pulsus alternans regularis maximus.

REFERENCE

1. King, John T.: The Clinical Recognition and Physical Signs of Bundle-Branch Block. *Am. Heart J.*, 1928, 3: 505.

Potential Heart Disease

C. G. Kerley, New York (*J. A. M. A.*, Feb. 16, 1929), stresses the fact that there is a type of child that is particularly susceptible to the infecting agencies that cause heart disease. Such a child possesses what is termed a favorable soil and may be recognized and belongs to one of three groups: Those who have or have had rheumatic fever; those who have or have had chorea; those who complain repeatedly of pain in the extremities which may not be accounted for by trauma or disease. A particularly susceptible child may be classified as belonging to the three groups. Heart disease in children so afflicted may be prevented in many by the eradication of diseased foci, first with a persistent and later with an interrupted use of salicylic acid alone or combined with an alkali. When physicians appreciate the dormant possibilities behind the "growing pains," heart disease will be appreciably lessened.

BLOOD TRANSFUSION *

By BANKHEAD BANKS, M.D.,
Charleston, W. Va.

About two hundred and fifty years ago the first blood transfusion was given to a human being, using animal blood; but this method rapidly fell into disrepute and complete disuse because of the extremely bad results. We now know that animal blood is very rapidly destroyed in the human system. About one hundred years ago human blood was first transfused, since which time there has been a steady growth in the value and in the use of this therapeutic procedure. The fear of resulting post-transfusion reaction has kept blood transfusion from being used as often as it should be, but, fortunately, due to improvements in method and technique, we no longer get these reactions. The use of unmodified blood and the absolutely correct matching of blood by the laboratory workers are the two factors rendering blood transfusion reactionless.

This paper covers the work actually done by myself and my co-workers, Drs. R. K. Buford and A. R. Lutz, and the disease conditions enumerated are those treated in our series of cases. In this work there have been certain interesting observations which I am unable to find mentioned in the literature covering blood transfusion, and which, if brought to your attention, may help some of you in some way. To impress upon you the greater usefulness of blood transfusion in combating a very large number of diseases and conditions, is my earnest wish. Transfusion is not used often enough. Many of us hesitate to use or to recommend transfusion, regarding the procedure as very difficult when in reality it is not only extremely simple and easy to carry out but is also one of the safest therapeutic methods at our command.

The beneficial results which follow therapeutic transfusion are due to the following things which it accomplishes: (1) It restores blood volume; (2) it shortens the coagulation time of the blood; (3) it increases the oxygen-carrying power of the blood by providing large numbers of new red blood cells; (4) it provides additional white blood cells and antibodies to combat infection; and (5) it stimulates the blood-forming organs to greater or to renewed activity.

Briefly enumerated, the most important indications for transfusion are as follows:

1. Hemorrhage and shock. Cases of sudden massive or acute hemorrhage with shock respond to blood transfusion more strikingly than to any other measure. One worker has recently reported a large series of cases of hemorrhage and shock treated by the intravenous injection of glucose solution and insulin, and I note that a large number of these cases, after a short period of time, suffered "secondary shock" and even collapse. This is not at all surprising, since death from massive hemorrhage and shock may be due to sudden collapse of the heart and blood vessels, and to sudden oxygen starvation of the body tissues, notably the brain. It has been noted in some cases that the patient's blood seems to lose all power of clotting after a very large hemorrhage. Any method, to be of real therapeutic value in hemorrhage and shock, must accomplish the things which we have been taught by experience reasonably to expect from the transfusion of blood: (1) restoration of blood volume; (2) shortening of the coagulation time; (3) increasing of the oxygen-carrying power of the blood; and (4) stimulation of the blood-forming organs to greater activity. Intravenous glucose and saline solutions are useful in restoring blood volume, but the solutions are very rapidly lost in the tissues of the body and by elimination. Therefore the "secondary shock." Furthermore, these solutions do not shorten coagulation time, do not increase the oxygen-carrying power of the blood, nor do they stimulate the blood-forming organs to greater activity. Blood transfusion is the therapeutic method of first choice in hemorrhage and shock.

2. Certain blood diseases, chiefly the anemias. Pernicious or primary anemia responds in a remarkable way to the transfusion of blood, but there is always a rapid remission in blood count, and hemoglobin to the previous low state, and no case of true pernicious anemia has ever been cured by blood transfusions alone. However, the feeding of liver or liver extract together with occasional blood transfusion results in rapid improvement, almost miraculously restoring these sufferers to complete well-being and giving them an expectancy of life and happiness never before thought possible. Liver feeding without transfusion results in slower improvement. The transfusions may be discontinued as soon as the patient's blood count is brought to somewhere near normal, but the diet of liver or liver extract must be continued indefinitely, the patient being in

---

* Originally read before the Kanawha Medical Society in December, 1928; revised, rewritten, and read before the Cabell County Medical Society, February 14, 1929.

From the Clinic of the New Charleston General Hospital.

all reality forced into a lifetime of liver feeding if he has true pernicious anemia.

It is worth our while to note that the secondary anemias are not improved by liver feeding, therefore it is in this type of anemia that we most frequently resort to blood transfusion, and with results extremely gratifying. This type of anemia is usually due to chronic bleeding or oft-repeated small hemorrhages, and to infection. In anemia due to chronic bleeding, and in that due to focal infection provided the focus be removed, blood transfusion is the ideal therapeutic measure in that it (1) restores blood volume, (2) stops hemorrhage, (3) provides new red blood corpuscles, (4) stimulates the blood-forming organs, and (5) provides antibodies and new leukocytes to combat infection. Is there any other single therapeutic method that will accomplish such results?

Case Report.—We have recently had a very interesting case which illustrates vividly the rôle played by focal infection in the causation of hemorrhage. This patient, a woman, had been treated for some time for epigastric pain and indigestion, thought due to a gastric or duodenal ulcer. She was first seen in consultation about four months ago because of a profuse hemorrhage from the gastrointestinal tract. She received four blood transfusions, in spite of which she had repeated very massive hemorrhages. A fifth transfusion was given, preparatory to operation, with a diagnosis of either (1) duodenal ulcer with hemorrhage, or (2) infected gallbladder, causing hemorrhages in the gastrointestinal tract. Thorough exploration of the peritoneal cavity, by Dr. Cannaday and Dr. Holzer, was negative, except that the entire intestinal tract was filled with dark blood and there was a chronically infected gallbladder, covered with adhesions and filled with stones. Because of the patient's critically ill condition, cholecystectomy was not done; but the gallstones were removed and rubber-tube drainage was instituted. A sixth transfusion was given following operation. Following this the patient had a very rapid, uneventful and complete recovery. The gallbladder drainage was continued for about three weeks. There has been absolutely no hemorrhage since operation.

Other blood diseases, such as hemophilia, hemolytic jaundice, purpura, and splenic anemia, are benefited by blood transfusion.

3. Septicemia should be taken up under blood diseases, but is considered separately because of the large number of cases seen and treated and because blood transfusion should be, with all of us, the therapeutic measure of first choice in combating this condition. A few years ago many of us were enthused over the possibilities of certain dyes in the treatment of septicemia, but today we have lost this enthusiasm because of the published post-mortem findings in cases so treated in some of our larger clinics. There will always be physicians who still use these dyes and metallic substances, because they have real value in certain disease conditions; but it is my opinion that they should not be used in septicemia. Why should we use foreign-body substance or metallic poison to inject into the patient's vein when blood transfusion gives much better results and blood is not a foreign body at all? Perfect blood matching and aseptic technique have rendered transfusion as safe as the withdrawal and reinjection of the patient's own blood. Small transfusions (200 to 500 c.c. of blood), repeated as often as necessary, is the ideal treatment in septicemia, and should be given preference over all other methods. We should never first use mercurochrome, holding blood transfusion in reserve for later use, for mercurochrome may render blood-matching impossible.

In spite of greatly improved obstetrical technique we still see cases of puerperal sepsis. Blood transfusion is a life-saving measure in such cases.

4. Pneumonia. Death in pneumonia is probably due to sepsis rather than to heart failure. The work of Cecil has shown definitely that the fatal cases nearly always show pneumococcus septicemia. Cecil says: "Starting out as a local process in the lung, pneumonia soon produces symptoms of toxemia, but the life of the patient is rarely in danger as long as the blood stream remains sterile. With the development of septicemia, the situation becomes much more serious. In cases with sterile blood cultures the death rate was only 10%, whereas in cases with positive blood cultures the death rate was 78.3%." Cecil points out that the modern serum treatment of patients with pneumonia consists essentially in the artificial introduction of pneumococcus - immune bodies. By this one hopes to sensitize the pneumococci and thus prepare them for phogocytosis by the leukocytes. If this be true, why would it not be excellent to combine serum treatment with blood transfusion in treating pneumonia? Or, better still, why not use just repeated blood transfusions? Repeated transfusions would supply immune bodies and, in addition, numbers of fresh leukocytes for the phogocytosis of the pneumococci.

In my series of cases there are only three septic

pneumonias treated by the transfusion of blood, two patients being alive today possibly as the result of each having received a single transfusion.

And yet, today, we hear of very few blood transfusions being done for septic pneumonia, but the mortality rate continues high and the cause of death is still usually thought to be heart failure. Our methods of treating pneumonia should be revised to include blood transfusion in the septic cases.

5. There are many other disease conditions in which blood transfusion may render the prognosis more favorable. A few of these are: pyemia, empyema, lung abscess, pyelitis, rheumatic fever, boils, burns, peritonitis, intestinal obstruction, and many others too numerous to mention. In extensive burns the method of exsanguination blood transfusion is very valuable in helping the body to get rid of the toxic products circulating in the blood, thus ridding the already overloaded kidneys of some of the strain.

In peritonitis, with or without either mechanical or paralytic intestinal obstruction, our mortality rate has been markedly reduced by using blood transfusion. It seems best, in such cases, to combine intravenous hypertonic (2%) saline with blood transfusion, first giving about 200 to 300 c.c. of saline and following this with about the same amount of unmodified blood. This should be repeated as often as the toxicity of the patient demands it.

Blood transfusion should be given patients who suffer with multiple, oft-repeated boils for which no underlying cause can be found and which condition does not respond to any of the usual methods of treatment.

6. As a pre-operative and post-operative therapeutic procedure, transfusion should be, in general, used much more frequently. It is a statement of fact that a patient with a red-cell count of three million and hemoglobin of fifty or less per cent is not a good major operative risk, and yet we often operate upon such patients without even considering transfusion either before or after operation. Such patients, given a single transfusion before operation and possibly one after operation, have their chances of recovery greatly increased. After all, the eventual outcome is the important thing in any operative condition, and not the successful removal of some diseased tissue or organ. Before operating we must use every agency at our command to insure the patient's wellbeing.

I wish to mention, especially, cases of tubo-ovarian disease, peritonitis, gastric ulcer and gastric malignancy, requiring operation but being on the borderline between good and bad risks. One or two transfusions will make of these cases good operative risks. Certain cases of gallbladder disease, requiring operative interference, are very poor risks because of jaundice which does not clear up. Transfusion will make these cases safe operative risks. There is no other pre-operative therapeutic method to be compared with transfusion in results, and we have no right to deny our patients the increased operative safety which transfusion will assuredly give them.

I could have shortened this paper a great deal if, before taking up the foregoing indications, I had said that there are few contraindications. Extremely high blood-pressure and cardiac dilatation are possibly the only contraindications to the giving of small blood transfusions.

The choice of the method of transfusion to be used is very important. Up to 1926 I had used the citrate method, but, finding it not entirely satisfactory, I decided to take up the whole or unmodified blood transfusion. Using the citrate method, I was getting about 40% reactions. The objections to the use of citrated blood, as given in the *Journal of the Amedican Medical Association* in 1923, are: (1) Citration causes destruction of blood platelets; (2) sodium citrate has in itself a toxic effect; (3) citration lowers the hemostatic power of the circulation; (4) develops anticomplimentary properties in the serum, lowers the opsonic index; (5) increases the friability of the red corpuscles. Some workers claim that citration, in destroying blood platelets, liberates into the blood plasma toxic by-products which cause deleterious after-effects or post-transfusion reactions. Naturally, all workers do not agree with the above objections, but the transfusion of citrated blood is followed by reactions of sufficient frqeuency and severity to contraindicate its use as a routine procedure in the hands of the average operator. Reactions after the use of citrated blood range from two to thirty per cent in the series as reported in medical journals by various workers.

Clinic Reports.—I have recently written to some of the leading clinics of this country, asking for information as to the method of transfusion used and the percentage of reactions resulting therefrom. From the clinics replying, the following is of interest as coming from three of the largest clinics:

(1.) One clinic uses both methods, the percentage of reactions following the citrate method being 35%, and the percentage of reactions following the use of whole blood being 1%.

(2.) One clinic uses only whole blood with less than 1% reactions.

(3.) One clinic uses only citrated blood with 15% reactions.

In our series of ninety-six transfusions, using whole blood, we have had one slight reaction, and that produced by the use of a certain substance, as I shall later relate. For this freedom from post-transfusion reaction much credit is due the laboratory workers for their correct blood-matching. Blood typing is not satisfactory. The prospective donor's blood serum should be matched against the patient's red blood cells, and the patient's blood serum against the donor's red blood cells. The blood of each acceptable donor should, in addition, be matched against the blood of all other acceptable donors, as it may be necessary to use more than one donor in a single transfusion. There must not be either agglutination or hemolysis of the red blood cells.

The multiple syringe method of injecting whole blood is relatively simple after a little practice, but requires three and possibly four trained workers. By this method, small or large amounts of blood, accurately measured, may be given quickly; no foreign substance is used other than 2 to 5 c.c. of warm, normal saline; no rubber tubing is used, and the blood is not exposed to the air. All syringes and solutions used to keep the syringes warm should be auto-claved and not boiled. We use as many 50-c.c. Luer syringes as necessary to give the desired amount of blood, each syringe being used only once during the same transfusion. It is best to use needles as large as the veins will accommodate, and the needles should be flanged to facilitate easy connection and disconnection of the syringes. We prefer the Fordyce or the Kaliski needle. The skin at the site of puncture should always be novocainized, after which the insertion of the large needles is absolutely painless. A transfusion may be easily ruined by causing unnecessary pain to either an overly apprehensive donor or patient. If there is anticipated trouble in needling a vein, an incision should be made to expose about one inch of the vein. This should always be done under novocaine anesthesia. A vein so exposed may be used repeatedly, if necessary, by simply removing the skin sutures. The recipient's vein should always be needled first and a small amount of warm, normal saline injected slowly while the donor's vein is being needled. It seems best to give relatively small amounts of blood, repeated as often as is necessary. We usually use from 200 to 500 c.c., but we have given as much as 1050 c.c. at one transfusion. The largest number of transfusions given a single patient was nine. To one patient we have given four transfusions totaling 1440 c.c. in thirty-six hours. We have never experienced any trouble because of too rapid clotting of blood.

Our patients have had red blood cell counts and hemoglobin determinations immediately preceding and again twenty-four hours after transfusion, and by tabulating all of our cases we have found that we can, twenty-four hours after transfusion, definitely count on an improvement in the red-cell count of 50,000 to 150,000 red cells per cubic millimeter of blood for each 100 c.c. of blood given. The patient showing the lowest red-cell count improvement after twenty-four hours was a case of Banti's disease, showing no increase after the first two transfusions, but with an average increase of 50,000 red cells per cubic millimeter for each 100 c.c. of blood injected during the following six daily transfusions before splenectomy, and after splenectomy maintaining the pre-operative improvement and showing an increase of 70,000 red cells per cubic millimeter for each 100 c.c. of blood injected during the patient's ninth and last transfusion before leaving the hospital apparently well. Many cases of secondary anemia have averaged an increase of 100,000 red cells per cubic millimeter for each 100 c.c. of blood injected. The increase in hemoglobin percentage has been proportionate to the increase in red cells.

In closing, I wish to cite some cases which, I hope, will illustrate a few things which should not be done if you have patients who may be candidates for emergency transfusions. We have found that certain substances interfere with blood matching and blood transfusion. One of these substances is mercurochrome, and to illustrate I will give the following two cases:

MRS. C.—Diagnosis, puerperal sepsis. Red cells, 1,000,000 per cu. m.m.; hemoglobin, 15%. Had received repeated intravenous injections of mercurochrome. For three days the blood of each of 24 prospective donors was repeatedly matched with the patient's blood, without finding a suitable donor. This patient died.

In comparison: Another case of puerperal sepsis with red-cell count of 600,000 and hemoglobin of less than 10%, clinically as nearly like the above case as possible, but who had received no mercurochrome, was restored to complete wellbeing by

repeated transfusions of matched blood from one single possible prospective donor. In both cases the streptococcus was found in blood cultures.

But I must admit that we have not a definite case against mercurochrome, because I have since given, to a patient with pyemia, intravenous mercurochrome after first securing a perfect blood matching with blood of the patient's father. Two hours after injection of the mercurochrome, the father's blood was still a perfect match. The amount and concentration of the mercurochrome in the first case was probably the factor rendering it impossible to obtain suitable blood. We hope to carry on additional investigations with mercurochrome. It may be quite possible that it is the infecting organism causing this inability to match blood in one case. There are many different strains of the streptococcus.

Another of these substances is hemostatic serum. In one case, a man suffering with marked hemorrhage, following operation for prostatectomy, had received two subcutaneous injections of hemostatic serum (10 c.c.). From eight prospective donors we were unable to procure suitable blood before the patient died. Another case: A man with marked and rapidly progressing anemia, due to profuse nosebleed, had received a single subcutaneous injection of hemostatic serum (5 c.c.). In blood-matching with five prospective donors no suitable blood was obtained. Twenty-four hours later, and after giving the patient intravenous saline, all five prospects were found suitable donors. Furthermore, we have produced the only post-transfusion reaction in our series by transfusing a patient without knowledge of the fact that she had, a few hours previously, had hemostatic serum. This patient, a woman with marked anemia due to chronic uterine bleeding, had been given a transfusion of 500 c.c. of whole blood without reaction. Four days later her blood and that of the same donor were found again to be perfect matches. We had planned to transfuse her again the following day, but during the night she suffered a rather marked hemorrhage from the nose. For this she received 5 c.c. of hemostatic serum subcutaneously and one side of the nose was packed. Six hours later we transfused her, failing to note that she had had the serum. She developed a moderately severe post-transfusion reaction. Four days later she was again transfused, using the same blood, after rematching. There was no reaction and none after any subsequent transfusions, using the same donor for all.

Glucose, given intravenously, is another substance which affects blood-matching and transfusion. In a great many cases we have found it impossible to match blood after intravenous glucose. It is fortunate that this reaction lasts only about twenty-four hours. It is fortunate, also, that we understand this reaction thoroughly, and we know definitely how to prevent it. Pendleton has shown that glucose solutions of 5% and 10%, and solutions of even greater concentration, cause red blood cell agglutination, this agglutination being much more marked if a relatively large amount of the glucose solution be mixed with a smaller amount of blood. This condition is encountered when we give glucose solutions intravenously very rapidly. The 5% and 10% solutions of glucose cause the most marked red blood cell agglutination. I have verified the above observations, finding that, in a mixture of 1 part of blood to 3 parts of 5% or 10% glucose solution, the agglutination of the red cells is marked, being visible even macroscopically. This probably explains many of our glucose reactions. It has also been proved that glucose, given intravenously, causes a decrease in the inorganic phosphates and the chlorides of the blood. The addition of 0.2% sodium chloride to all glucose solutions intended for intravenous use will definitely prevent red blood cell agglutination. If glucose solution not so prepared be given, and if it is then found impossible to match blood for a necessary blood transfusion, the giving of saline solution subcutaneously or intravenously will render blood matching probably productive of a suitable donor. It is very important that all glucose solutions, no matter how prepared, should be given very slowly.

These substances are but a few of those which cause trouble in blood matching and blood transfusion.

In closing, I wish to say that, in my opinion, the value of blood transfusion as a therapeutic measure is not realized by a vast majority of medical practitioners. When the method is used it is usually late, for we of the medical profession are too cautious and because of this we often fail to recommend this very simple and very valuable measure until too late. Late in certain disease conditions, and late in hemorrhagic states, irreparable body-cell damage may have been wrought, and of no value will be the therapeutic measure which, had it been given earlier, might have saved the patient's life.

I realize that I have omitted many important things, because of uncertainties which I hope will be

cleared up in future work, and I wish to venture the prediction that blood transfusion will, in the future, be used much more frequently and in a large number of diseases at present thought not amenable to this method of treatment.

LYMPHOSARCOMA AND HODGKIN'S DISEASE *

By CURTIS F. BURNAM, M.D.
Baltimore, Md.

While true lymphosarcoma is a neoplasm and Hodgkin's disease is an infection, in all probability, it seems justifiable to consider them together because of the clinical resemblances and the response to the same kind of treatment. In addition, to these terms the names *lymphogranulomatosis*, *lymphoblastoma*, and *pseudoleukemia* are frequently encountered in the literature, describing the same or similar conditions. They are all characterized by a predilection for the lymphatic apparatus of the body, to the tendency to spread rapidly and form large tumor masses, to impair general health by interference with function of vital organs, and to be associated in the later stages with anemia and fever.

Etiology.—There is no evidence to show that these diseases are either contagious or infectious in any ordinary sense. Multiple cases in a family are extremely rare; however, I have had an uncle and a nephew, two brothers, and a brother and sister. The same absence of infection or transportation is observable in houses, localities, and attendants of those suffering with these diseases. Many observers have followed Sternberg in considering the disease due to some form of tuberculosis. The weight of evidence is against this, as also against its being a pleomorphic diphtheroid infection, as was first strongly suggested by Hunting's investigations. Hodgkin's disease, occurring at any time of life, is more common in the middle decades; while lymphosarcoma is more frequent in the young and aged. In my own experience, the association with tuberculosis and syphilis and other new growths is very rare.

Pathology.—In the absence of a definite, known etiological factor, the differentiation of lymphosarcoma and Hodgkin's disease is made on the basis of the histological structure. Lymphosarcoma is, as its name suggests, characterized by a proliferation of lymph cells; the individual cells are somewhat more irregular and the nuclei larger, and mitotic figures more common than in normal lymphoid tissue. The appearance, however, is almost identical with the hyperplasias due to ordinary infections, to tuberculosis and to lymphatic leukemia, and to isolated early Hodgkin's tissue. The tissue changes in Hodgkin's disease are much more variegated. In the typical section there is a delicate reticulum filled with small and large lymphocytes, endothelial giant cells, actively growing endothelial and plasma cells and eosinophiles. As the acute stage passes these cells are replaced by fibrous tissue and in the end this may be complete. The typical picture is, however, the exception. Almost every conceivable combination of the elements mentioned above may be met with. In some cases the endothelial proliferation so completely dominates that in single sections a diagnosis of endothelial sarcoma is almost unavoidable. Many authors have described the actual development of endothelioma in Hodgkin's glands.

Beginning in a single gland, or group of glands, and at first limited within the capsules, the process apparently metastasizes to other glands, and most frequently to all the lymphoid tissues before breaking through the capsules and invading surrounding tissues, and metastasizing to various parts of the body. The lungs, the liver, the bone-marrow, bone itself, the brain, the spinal cord, the skin, and practically any part of the body may be involved.

The microscopical characteristics which separate the two diseases also serve to distinguish most other new growths and infections. The greatest difficulty is met with in differentiating simple hyperplasias from lymphosarcomas. Lymphatic leukemia can usually be distinguished by its typical blood picture, and it is also of interest that the response to radiation in the disappearance of tumors is striking, in that lymphosarcoma is so much more easily injured and made to disappear.

The glands first involved in more than eighty per cent of all our casse have been those of the neck. Then comes the abdominal and mediastinal initial enlargements, and occasionally the intestines, or the spleen, may be the first organs showing tumor.

Course.—As with all infections and with all new growths, there is a very great variation in the duration, in the rapidity of progress, and in the general effects of these diseases on health. There are the acute, fulminating types, running the entire circuit in a few weeks to months, the subacute lasting from eighteen months to three years, and the chronic, which in some cases persists for years, with the

---

* Read before the West Virginia State Medical Association at Fairmont, West Virginia, May 23, 1928.

patient in general good health. Untreated, however, all cases terminate fatally, so far as the literature or personal observations go to show. Under treatment, certain acute cases can be rendered chronic and some of the chronic and subacute cases tremendously modified and apparently cured.

Symptoms.—Usually, tumor is the first sign of the disease in both groups of cases. The extent varies greatly from case to case. The growths in lymphosarcoma are on the average a little more rapid, and it is more common to find immense enlargements with comparatively few general disturbances. In acute Hodgkin's disease the general symptoms may completely mask the picture; this is especially true in the abdominal and intestinal type—to such an extent that no gland can be found on clinical examination. It is not uncommon to meet with patients who have had radiotherapy and who present no glandular enlargement and yet show the fever, the weakness, the skin manifestations, and other symptoms of the disease. In most instances the active trouble is in the retroperitoneal glands, and the failure to find tumor is due solely to our imperfect methods of investigation. Changing rapidly under treatment, Hodgkin's glands vary in size during the disease without treatment. This is rarely observed in lymphosarcoma, but is occasionally met with in both localized and generalized forms.

Pruritus is a frequent accompaniment and may be the initial symptom in Hodgkin's disease. The itching is usually unaccompanied by gross skin lesions, but drying, bronzing prurigo eruptions and erythodermia and herpes all are present in some cases. The skin manifestations common in Hodgkin's disease are rare in lymphosarcoma. In both, direct involvement of the skin by the specific disease is not infrequent, but is more common in lymphosarcoma.

Fever of an irregular type, both as to daily variations and periodicity, is quite common in Hodgkin's disease and is absent in lymphosarcoma except in the last stages. The high, intermittent fever, sometimes reaching a peak of 106° F., and accompanied by chills and sweats, is particularly distressing. Occasionally in general and frequently in intestinal cases the picture suggests typhoid fever.

Weakness and malaise may be the initial symptoms, and is often present out of proportion to the general appearance and condition of the sufferer. The malaise is generally only a mild aching in the muscles and joints; but where nerve roots are pressed on, common in abdominal cases, there may be a violent and continuous pain.

It is obvious that a great variety of complications and symptoms are dependent upon the location of the disease. Where brain metastases are present, a condition fairly uncommon in Hodgkin's disease but common in lymphosarcoma, the headaches, choked discs and typical phenomena of brain tumor present themselves. Mediastinal and respiratory symptoms, varying from a slight cough to violent dyspnea, and dysphagia accompany mediastinal and lung involvement. Hemoptosis is very uncommon. Dilatation of the veins of the chest and neck and cyanosis are present in the advanced cases. These symptoms are mostly due to pressure, but may be due to direct involvement of the larynx, trachea and bronchi. Pleural involvement is common in both Hodgkin's disease and lymphosarcoma where there is extensive mediastinal growth, but rare without it. Abdominal symptoms may be very pronounced. In a recent lymphosarcoma a persistent and very intractable dysentery dominated the situation. That it was due to the specific disease was evidenced by the absence of all the ordinary causes of dysentery and the rapid improvement under radiation. Occasionally, the extension into the breasts from contiguous foci suggests cancer, and the direct invasion of bone, metastatic carcinoma. In lymphosarcoma, which is general, it is not uncommon in the last stages to observe sloughing and necrosis of the mucous membrane of the mouth, throat, and intestinal tract. Sometimes an entire tonsil or soft palate goes in a few days. This complication is rare in typical Hodgkin's disease. In both diseases, death usually results from inanition, anemia, and gradual failing. Where vital organs are involved, the death may be due to the removal of some necessarily vital function, and not infrequently the end is brought by secondary infection.

Blood Changes.—Depending on the stage of the disease and the individual peculiarities of the patient or infection, there is a great variety of blood pictures. In the early stages the blood is essentially normal in lymphosarcoma, but in Hodgkin's disease often shows an increase in blood platelets and in transitional cells. Leukocytosis is common in both diseases, but is more likely to be of the polymorphonuclear variety in Hodgkin's disease and of the mononuclear type in lymphosarcoma. Leucopenias are common in both types, in the early stages, and very frequent in the end periods of the disease. The counts rarely go above sixty thousand, although in one case we have observed two hundred and fifty

thousand; and rarely under twenty-five hundred in the early stages. In the very last stages of lymphosarcoma the white cells may almost completely disappear. The red blood cell counts and hemoglobin are usually good in all except the last stages of the disease.

Treatment.—Along general lines freedom from mental and especially from hard physical labor is very important. A food high in nutritive value is indicated when no fever is present. Moderate exercise is desirable unless contraindicated by general signs of active infection, fever, pain, etc. Intercurrent colds and influenza are particularly likely to bring on relapses, and for this reason every care in the way of avoidance of infection, such as avoiding crowds, people with colds, always protecting against chilling and wetting, should be practiced.

There are reported cases in the literature of improvement under arsenic therapy, but from personal observations this measure does not seem of very much value and may be even harmful.

Vaccines have been used, but without any very convincing results. Coley's toxin, and Bunting and Yates' diphtheroid vaccine, have been the principal ones used, although considerable work has also been done with tubercular viruses.

Surgical removals should be limited to taking out a gland for diagnosis. Where there is a single freely movable group of glands, complete surgical removal is indicated and probably is of distinct value. Attempts to remove groups of glands apparently reduces the resistance of the patients, and renders treatment by irradiation less effectual.

Irradiation has proven of immense value in treating both Hodgkin's disease and lymphosarcoma. In this connection, ultra-violet light, x-ray, and radium are all of value, but in different degrees. Ultra-violet light is of distinct value in treating the skin complications, and it also is of value in sustaining the general resistance of the patient. This is especially true in the anemic and weak patients. To it may be added blood transfusions and liver diet. The treatment can be given over the body, or over skin lesions, indefinitely in daily dosage. It has no effect directly on the deeper processes, and does not relieve fever or reduce tumor or actually cure the disease. In combating both these conditions it must be constantly kept in mind that there is a natural resistance and tendency to spontaneous cure which rests in the body. This should not be lowered by injudicious overtreatment, and, so far as possible, should be preserved and increased. This latter is somewhat difficult in view of our imperfect knowledge as to what the defensive powers really are.

Judiciously used, both x-ray and radium seem to improve the general status and resistance of an individual. However, their essential action is on the disease, either destroying it or so weakening it that the body can overcome it. Heavy single doses, such as are applicable to localized malignancy, are to be avoided. They can be given where the disease is localized, as in one side of the neck, but have no advantage over repeated dosage.

X-Ray Technique.—While Hodgkin's disease and lymphosarcoma may and do readily metastasize or spread to all parts of the body, it is not sensible and safe to attempt treating all possible sources of infection. The treatment should be limited to the definitely determinable involved regions, usually groups of lymphatic glands. If the signs of active disease persist—for example, fever, blood changes, skin changes, weakness—after the disappearance of glandular masses and after x-ray studies show clear chests, it is indicated to treat the abdominal regions containing lymph glands and, in some cases, the bone-marrow. Almost any type of x-raying is in some degree effectual in reducing tumor masses. A quarter of a century ago Pusey, and later Senn, demonstrated this in some huge neck cases with unfiltered x-ray. However, while the tumors disappeared, the patients grew rapidly worse. The principle which should be followed is to use that type of x-raying which will deliver into the affected parts as large a dose as possible with as small a dose to the rest of the body. This is secured by small portals, heavy filtration, and great focal distances, high voltages and amperages, such as is furnished by the deep x-ray therapy machine. The actual dosage given at one exposure should be small—one-tenth of an erythema dose to all affected parts. The patient is best kept in the clinic, and after such a treatment the effects on temperature, general feeling, appetite, etc., observed. When no ill effects are noted, such a treatment can be repeated very second day until three-quarters of an erythema dose is given. There is usually prompt diminution in the size of tumors; this is more rapid and striking in lymphosarcoma than in Hodgkin's disease. From a single series of treatments in the course of four or five weeks, there may be a complete disappearance of all enlargements. Careful observation of the blood pictures is very important. In the polymorphonuclear leucocytosis the count falls and the differentiation proportions of the cell types approaches normal. Where

a leucopenia is present there may be, and often is an increase in the total cell count. Usually there is a slight decrease in blood platelets which, however is very temporary, and the red blood cells and hemoglobin almost always increase. No patient should be dismissed from treatment until all subjective and objective signs have disappeared; when this result can be obtained, it should be a rule to have such patients report in every sixty days for observation, and at any time in case of symptoms of any kind. It is obvious that the treatment has to be individualized to each patient; this is due not only to the fact of the wide variations in distributions of disease, but also the very great differences in radio sensibility of different tumors, and to the degrees of toleration of different patients to treatment.

Radium Technique.—The same general principles are to be observed as in x-raying. Treat the involved regions and contiguous probable regions of infection, and avoid the overdosage as a whole. The filtration should be enough to secure pure gamma radiation; for superficial glands, two inches is distance enough; for deep glands, as in mediastinum or chest, from three to four inches from the skin should be employed. Single doses are applicable only to the localized cases where no evidence of constitutional disturbance is evident. Where sufficient quantities of radium are available, short exposures daily or every other day can be given, as with the x-ray. When only a little radium is available, it can be given continuously over a number of days, until the dosage is applied. This works equally well as with the shorter exposures, and in very ill patients has a decided advantage. In patients with extensive general involvement, and with marked constitutional symptoms, radium has great advantages over x-ray. As measured in ionization units, it seems that radium rays are effectual in much smaller dosage than x-ray; this, of course, is of advantage in protecting the defensive mechanism of the body. As a rule, the tumor masses go much faster with radium than x-ray, when anything like equal dosage is given. The rapidity of disappearance is also dependent on the intensity of the dosage, varying directly with this factor. It may be very difficult to entirely dissipate the tumor in cases of old fibrotic glands. General radiation, independent of gland involvement, should be resorted to only when general evidence of disease persists, as already noted under x-ray treatment.

The actual dosage given to the tissues affected should be from fifteen to twenty-five per cent of an erythema dose; whether given in a single exposure or in a series covering a week or ten days; this can be repeated in four or five weeks. Hodgkin's cases tolerate higher dosage than lymphosarcomas when the disease is generalized. There is a wide difference in individual patients as to tolerance; in some Hodgkin's cases, as much as three hundred gram hours has been given within a year without any apparent deleterious effects on the body or the blood. It is rare to give more than twenty gram hours at any one period; never as much as this at a single dose.

Results and Conclusions.—The earlier the disease is met with, and the more thorough the treatment, the more likelihood of cure. However, even in the advanced cases, cure is not impossible; most patients judiciously treated have their lives prolonged and are more comfortable and efficient in their work. Without treatment, the disease is always progressive, and, in most cases, rapid. The chronic cases lasting over years are great exceptions. The results in lymphosarcoma and Hodgkin's disease are quite similar. At the meeting of the American Medical Association in 1926, I reported thirteen cases of five-year cures of Hodgkin's disease; these patients are still living, and well. We have had a number of lymphosarcoma cases free of all trouble, from periods of from five to twelve years. I speak of cures in these cases with full advisement of the fact that in malignancy, and in chronic infections, one should perhaps never use the term. I use it, however, as apparently no one is willing to grant anything but palliation and prolongation of life to these patients, and it seems as certain that there are cures as with any operative therapy for malignancy or of spontaneous cure of tubercular glands, bones, etc. Only a small proportion of the patients who present themselves for treatment have no benefit at all; these are very advanced and ill people. In all, I have seen about three hundred and seventy cases.

Patients with Hodgkin's disease should not be given death sentences; should be thoroughly studied and treated and, when possible, should be returned to their usual occupations and activities, and probably should be made to observe the same kind of consideration for other people that we demand of tuberculous patients.

Discussion

DR. G. H. BARKSDALE (Charleston): In arising to discuss a subject which is so intensely academic as the one that Dr. Burnam has discussed for us today, I can do no better than to admit very freely that

what I have to say has been culled from a review of the current literature. In doing this I can, as I have said, only present the status of the thing as I see it; that is, to say that lymphosarcoma, Hodgkin's disease, leukemias, and a group of the diseases Mallory has spoken of belong to the group known as the lymphoblastomata, the unit cell or the parent cell being the lymphoblast, these diseases differing one from the other in the matrix, the stromata, whether their predilection be for the isolated lymph glands or lymph nodes and persist there, or whether they tend to invade and penetrate the adjacent tissues, or whether they tend to proliferate in the blood stream.

It seems to me that trying to classify them under one group with different potentialities, or with different habits, gives us a clearer understanding of the whole condition. Lymphosarcoma and Hodgkin's disease, of course, are the ones *par excellence* which demonstrate the fact that I have just tried to bring out: that there is close similarity.

Dr. Mallory has further referred to this as suggesting rather that Hodgkin's disease is the same as a lymphosarcoma, but of the scirrhous type.

Of course, all of this talk in the main has to do probably with prognosis, in that in plain carcinomas we note that, the more scirrhous the tumor is, the better the prognosis is, the less tendency they have to infiltrate, and so on.

Another mystifying thing about the two growths that Dr. Burnam has spoken of is that in their details of study they are identical, and, to further complicate the situation, one has been known to pass over into the other.

It was further interesting to me to see that, in 11,925 autopsies, the incidence of lymphosarcoma and of Hodgkin's disease was exactly the same—not exactly the same, in that in that number of autopsies there were 17 lymphosarcomata and 16 of Hodgkin's disease. It made the doubting Thomas just wonder if they didn't sort of balance them up and say, "We are going to call this one a Hodgkin's disease, and we are going to call the next one a lymphosarcoma." However, I am sure the majority of the workers feel very definitely that they can, by biopsy, determine beyond a doubt whether it is a lymphosarcoma or Hodgkin's disease.

It is interesting in this connection, too, that DeJardon has stated that irradiation acts so typically and so delightfully, as has been shown by Dr. Burnam's pictures, on these two diseases that it has been used in cases where a biopsy was not a practical thing, to arrive at a differential diagnosis.

DeJardon and Ford (to quote him again), of The Mayo Clinic, have reported brilliant results, such as have been shown; but, as I gather it from their work, from Minor, from Isaacs of Boston, and others, while irradiation works marvelously (I repeat, I gather this from what I have read), in no sense is it curative, and, further, it has not been definitely established that the length of life of the patient has been prolonged by this form of treatment. However, it is one of the most brilliant things in therapy to see these tumors pass away.

While I am taking no exception whatever to the statements made by Dr. Burnam, nor am I challenging any of the remarks, those are the conclusions that I gather, as stated.

DR. BURNAM (*closing the discussion*): I want to thank Dr. Barksdale for his discussion. It really covers exactly the position in the literature. For instance, lymphosarcoma seems to be quite different from lymphatic leukemia, as I mentioned, if we use rays as a differential agent. It takes many times the quantity of rays to make a lymphatic leukemia gland disappear as it takes to make a lymphosarcoma disappear.

The literature generally is very pessimistic, and I haven't, personally, been able to get as good results in the extensive cases with x-ray as I have with radium. Most of my work, all of the early work, was done with radium, and apparently that hasn't been used extensively in other clinics, and I have wondered if perhaps the results—I mean in the way of permanency—in some of these cases may not be due to that factor. Certainly, patients that are clear without treatment for some years may be considered cured, and we had 28 cases of Hodgkin's disease out of 170 in which the patients had been free from symptoms for from one to ten years. Two years ago we kept close watch of those patients, and I believe they are all living today.

Ergosterol and Cathode Rays

It has been shown that the high-voltage cathode rays developed by Coolidge also may transfer antirachitic potency to ergosterol and substances containing it. The experiments showed that this sterol exposed to cathode rays is not rendered as potent as when subjected to ultraviolet irradiation from a mercury vapor quartz lamp. These experiments indicate that the antirachitic properties produced by cathode rays are not due to exposure to ultraviolet radiation produced by the rays themselves.—*Journal A. M. A.*, March 9, 1929.

THE PROPHYLACTIC TREATMENT OF AURAL DISEASES *

By E. R. McINTOSH, M.D.
Elkins, W. Va.

There is no disease in the realm of medicine where prophylaxis plays such an important rôle as in the acute ear infections. The preventive treatment in the acute ear will save all the complications from occurring, with their sequelæ. Acute otitis media is the most common ear disease that the general practitioner comes in contact with. The treatment, or, rather, the prevention, of this malady has changed radically in the past few years. By the proper preventive treatment, mastoid abscess, meningitis, brain abscess, sinus thrombosis, and death may be prevented. An ear inflammation, taken in its earlier stage, especially an acute otitis media, is a simple matter. Pain of a lancinating character is always the principal symptom referable to the ear. It can be relieved by heat, which also many times allays the inflammation and seemingly, on a great many occasions, prevents the formation of abscess. For the pain in the ear, one drachm of chloroform to one ounce of olive oil, hot as can be borne, may be used. Keep the ear canal filled with this fluid and apply hot-water bag, electric heater, or hot salt bag. Heat is the most important thing, but it must be used early in the disease. Hot, antisepticized water may be used at this time, as hot as patient can bear it is permissible. After four or five hours, in acute otitis media, hot applications are useless. If there is not a marked relief from the heat within four or five hours, then do not wait, but puncture the drum whether there is evidence of fluid or not. The size and shape of the opening in the drum does not seem to make much difference as long as it is in the lower portion of the drum membrane. Puncture of the drum membrane is useful, when not imperative, in painful redness of the membrane before the fluid has accumulated in the middle-ear cavity. It gives almost instant relief and is usually not followed by any discharge.

The treatment after the drum membrane has been punctured is very important. External heat is applied to facilitate the discharge and dry cleansing of the ear canal with a little sterile cotton on an applicator. A twenty per cent solution of argyrol may be dropped in the ear every three or four hours, well heated but not to be uncomfortably warm to patient. This is to be swabbed out of ear before the next dose is applied, getting the canal as dry as possible. A syringe or any form of flushing should not be used in an acute inflammation of the ear. Mastoid abscess usually follows the injudicious use of the ear syringe, and even other forms of flushing as well. Dry cotton, on some form of an applicator under good illumination, will give the best results. Even in chronic suppurative otitis media of long standing the discharge will cease and dry up after syringing is stopped and the dry method instituted.

The care of the nasopharynx is very important. The nose and throat should be sprayed out frequently with some bland oil preparation containing menthol and camphor. In all cases of acute otitis media the complication to be feared is mastoid abscess. Early intervention, a paracentesis of the drum, whether or not there is much swelling of the drum membrane, remembering that an early paracentesis will do no harm even if there is no marked bulging of the drum and no pus in the middle ear, will do a great deal of good by giving up exudates which would probably form pus in a short while. An incision into the drum membrane has no effect upon the future hearing of the organ, as the rent heals up within a few days.

Do not wait for your acutely inflamed ears to break. If your patient has an earache, use heat and olive oil and chloroform in the proportion of one drachm of chloroform to one ounce of olive well. Keep the ear filled with this solution; apply heat in the form of hot-water bottle, electric heater, or salt bag. If no relief is obtained within four or five hours, puncture the drum and dry-clean the canal for a few days with a wad of loose, sterile cotton kept in the canal, and a bland oil used in an atomizer three or four times a day for the toilet of the throat or nose. No syringing with liquids of any kind should be done in acute inflammations of the middle ear. It is only by the use of these means that we may hope to prevent the more serious complications of acute inflammation of the middle ear.

* Read before the Barbour-Randolph-Tucker Medical Society at Elkins, West Virginia, on February 19, 1929.

Vaccines for Prevention of Meningitis

The use of vaccines for the prevention of epidemic meningitis has not been extensive enough to establish any definite general medical opinion in regard to its value.—*Journal A. M. A.*, March 23, 1929.

THE RENAL FACTOR IN DIAGNOSTIC STUDIES OF THE GASTRO-INTESTINAL TRACT *

By JONATHAN FORMAN, A.B., M.D.
Columbus, Ohio

Every physician who attempts the interpretation of gastrointestinal symptoms is at once confronted with the possibility that the things of which his patient complains may be reflex from the urinary apparatus. Too often, however, we are a bit slow to recall this possibility. It is the purpose of this paper (which, by the nature of its subject, must prove to be a bit rambling) to raise the index of suspicion in you and me so that we shall always have the kidney and its ureter in mind when dealing with the patient with a series of chronic gastrointestinal complaints.

I say *chronic* gastrointestinal complaints because the importance of making this differential diagnosis in the acute surgical conditions of the kidney and its pelvis and ureter have been emphasized enough. So that, today, it is a widely accepted rule that no patient is to be submitted to operation for appendicitis unless a urinalysis has been made to rule out a possible pyelitis or other urinary-tract infection. The stomach and intestinal symptoms seen in renal calculus, Dietl's crisis, and other urinary obstructions are well known and we usually watch for them.

In the differential diagnosis of gallbladder from kidney infections, there are several things that help. In renal colic, the reflex rigidity is in the lumbar muscle (although the abdomen may be very much distended) and the radiation of pain caudal. It must be remembered, however, that we may have a kidney stone in abdominal rigidity.

Bimanual palpation should be done routinely in every enlargement in the right hypochondriac region to prevent the missing of a right hydronephrosis. The x-ray also helps here, as does the laboratory study. Bile, of course, does not appear in the urine from the passage of a renal calculus, and blood is not found in the urine from the passing of a gallstone. Normal urine in an attack of pain does not exclude gallstones, but it helps very much to rule out a kidney stone. Between attacks of gallstone colic, the urinalysis does not help at all; but if we examine it and find a pyuria, it is suggestive that a chronic pyelitis is the cause of recurring attacks of pain in the right upper abdomen and back. What we have said here may be made to apply to the question of duodenal ulcer and to appendicitis.

So it is true that, in the nausea and vomiting of chronic nephritis, the association of gastrointestinal disturbances with renal disease has its most common recognition by all of us.

From our viewpoint there are three distinct groups of kidney conditions:

1. Chronic interstitial nephritis with its high blood-pressure, retention of products of protein metabolism, its uremia. The study of this impairment is brought about by the history and the blood-pressure readings, and the actual degree of impairment is best determined by first doing one of the concentration tests. In our work we use Fishberg's, and if we find that the maximum specific gravity which can be produced is under 1.020, we do a blood-urea nitrogen test to determine whether the impairment is compensated or not, and the actual degree of retention.

2. Chronic parenchymatous nephritis with its albuminuria, metabolic disturbances, anemia, and edema.

3. Chronic infectious pyeleonephritis with its pus in the urine.

The case which comes in these groups ought not, then, to present much of a confusion if we get a carefully taken history, note the blood-pressure accurately, and do a urinalysis. It is true that all cases suspected of belonging in Group 1 should have a concentration test, since a single urinalysis may not give the answer.

The factor of a chronic, non-suppurating disease of the kidney or its ureter, however, serving as a basis of reflex disturbances in the stomach and intestines, is not commonly kept in mind by the general practitioners of medicine or surgery nor by the internist; not even, I am sorry to say, by the gastroenterologists.

An analysis will show that the most of our mistakes are made in that group of patients with vague abdominal symptoms. I wish to stop for a moment and discuss this type of case from three viewpoints:

First, as the chronic intestinal invalid of Bryant.

Second, as the irritable colon or disordered function of the colon.

Third, as the case with ureteral stricture.

This brings us to the question of making a mistake and condemning to surgery the chronic intestinal invalid, by which we mean the patient who is a very frequent visitor to the physician's office and who

---

* Read before the Central West Virginia Medical Society at Buckhannon, West Virginia, September 19, 1928, and Marshall County Medical Society, April 9, 1929.

gives an indefinite history and a long list of complaints and in whom the most careful physical examination reveals very little, if any, organic disease. Sometimes, on suspicion, the teeth, the tonsils, the appendix, the gallbladder, a slight perineal or cervical laceration or uterine displacement receives the blame. Where no pathology at all is discovered, we usually tell the patient that she is run down, anemic or nervous. These patients complain of anorexia, fullness in the epigastrium after eating, pyrosis, eructations, borborygmi, and constipation. They have, in most instances, already been in the hands of other physicians. They add to their list of complaints as their education progresses from physician to surgeon, to osteopath, to chiropractor, back to physician and then to the neurologist, until the graduates present the most pitiable story to which a physician is called upon to listen.

The usual treatment is to give these patients tonics or bromides and place them on some routine diet—as often patterned after the whims of the physician as the needs of the case. The patient carries out this treatment faithfully for a while, and since the real cause is still operative, the improvement, if any, is only temporary. When the complaints of the patient return or are aggravated, as they surely are in time, more extreme measures are recommended. If there is slight localized abdominal pain, or when there are other abnormalities present, such as were enumerated above, the appendix, gallbladder, or the uterus receives attention at the hands of the surgeon. Incidentally, the chance for curing these patients is inversely proportionate to the number of times there has been operative interference in the case. After the operation the patient feels well for a time, often sufficiently long for the surgeon to have lost track of the case, and, therefore, the surgeon's accumulated wisdom contains the false impression that he is able to help this type of invalid. If sent to the baths or the country for a rest, this same patient comes back feeling well for a short time. In the course of a few months these patients nearly all come back with their old complaints and then we label them as neurasthenics. They are sick; they know they are sick. We say that they are not. They leave us and go to a practitioner of some of the pseudoscientific cults, who finds the "cause" and removes it—or at least so the patient is led to believe. For a time the practitioner of the cult can and does help these people, and his accumulated experience actually misleads him into believing that he, too, has the power to restore health.

In spite of the fact that, upon examination, nothing definite is found except a state of poor nutrition and more or less obvious fatigue, these patients are sick. They feel sick, often look sick, and usually act sick. Furthermore, their minds are firmly made up that they are sick. They must have relief from their suffering. If we do not afford it, then they will seek elsewhere. It does mighty little good to talk to them of modern medicine. What wonder is it, then, after the patient has consulted three or four of the best physicians in her locality, has had her gallbladder and her appendix removed, not infrequently the uterus and ovaries, the tonsils and perhaps her teeth, and with each operation her trouble has, after a respite of longer or shorter duration, returned in an aggravated form, that she seeks relief at the hands of quacks and charlatans.

Aside from the one fixed idea of suffering, the patient's mental state is characterized by its instability. They are in a constant state of unrest, excessive irritability, and at times a false vivacity. They waste their nervous energy at a great rate in work, amusement, and often their attempts at rest itself.

If we follow the careful studies of Mills on the relation of bodily habitus to visceral form, position, tonus and mobility, we will be compelled to classify these patients in the group of hyposthenic individuals. The patient is of the long, slender type. The vertebral spines stand out conspicuously. The patient exhibits the usual fatigue posture with a collapsed lower thorax, the greatly narrowed costal angle, and an abdomen that is prominent below but not above the umbilicus. The pupils are usually dilated. The respiration is rapid and of the upper thorax type as a rule. The skin is usually dry, often rough, and usually a yellowish, dirty brown with marked discoloration of the entire eye socket. Subcutaneous fat is often lacking and the skin has lost its elasticity. The musculature is of poor tone. Except for possible coincidental foci of infection about the teeth, tonsils or sinuses, the physical examination is usually negative. Examination of the abdomen reveals gas, the characteristic distribution of which Bryant has described. It may be either general or localized. If localized, the most common place is in the region of the cecum and the ascending colon. It may at times be localized in the region of the sigmoid. I shall not discuss the group further except to warn you again of the danger of condemning these patients to surgery. The chance of good hearth in this type of patient is inversely proportional to the number of organs removed by too carelessly curious surgeons.

The management of one of these patients resolves itself into: (1) Adaptation of the patient to her environment; (2) dietary management; (3) physical development and reëducation; (4) drug therapy.

In dealing with this group, we must be most careful if the complaint at first suggests gallbladder disease to us. In this group we find a large subgroup of patients who exhibit an achylia or hypoacidity, a lowered basal metabolism, and gallbladder which does not fill with the dye (as Kirklin and Plummer have first pointed out). We must be very alert not to be misled in our management of this kind of a patient.

In the second place, I purpose to discuss in detail that group of disordered function of the colon as described by E. S. Emery, Jr., of Boston. The symptoms of the disease vary much; but these patients fail, when given a careful x-ray and laboratory study, to show any organic pathology in the gastrointestinal tract and are usually classed as functional.

"Their symptoms may occur at any place in the abdomen and may vary from the mildest distress, such as a slight fullness or heaviness or weight, to the most severe cramps, as typified by the schoolboy green-apple colic. These patients usually complain of distension and frequently loosen their clothes to obtain relief. Most patients complain of an excess of gas with gaseous eructations, and become belchers who are familiar to us all.

"As to the time of occurrence, the symptoms very frequently manifest themselves before breakfast, thus differing from peptic ulcer, which gives discomfort before breakfast *only* when there is a 12-hour retention. Another difference from ulcer symptoms is that the distress is quite haphazard in its appearance. Although tending to come on within a few minutes after eating, the symptoms of gas, belching, etc., may be troublesome at all times of the day or night. The distress may be *intermittent* in character, differing from the remittent pain of ulcer.

"These symptoms are brought on or aggravated by many factors.

"Certain foodstuffs, such as cabbage, apples, peas, are frequent causes of the symptoms. The patients have learned by experience that the eating of such kind of food will be followed by the sensation of gas, distension, rumbling and gurgling or the more severe types of distress. Oftentimes our patients have ceased to eat certain foods as they find these things disagree. Cold substances are often the cause of immediate distress.

"Thus ice-cream will lead to discomfort of one kind or another, but if warmed in the mouth before swallowing it will be tolerated perfectly. Severe shaking, such as brought about by riding over rough roads, may cause discomfort. Chilling the surface of the body, as in swimming, is another disturbing factor.

"Those things which mechanically stimulate the colon may cause the distress, such as a bowel movement, the giving of an enema, or massage of the colon. Likewise, those procedures may give relief when the distress is present. Cathartics should likewise be classed as a cause of this distress, even though they may seem to give temporary relief."

The diagnosis of this condition is based upon the history as outlined above; the finding, upon physical examination, of spasm and tenderness along the course of the colon, and the soft, "gassy" stool with no blood. The diagnosis is confirmed by the barium enema. The barium, when the filling of the colon is watched under x-ray screen, tends to flow in intermittently, being held up by the contractions which finally relax, allowing the barium to run ahead. This can be observed from two to six times in the passage of the barium enema up to the ileocecal valve.

The patient has often learned to get relief by belching, by taking soda to get relief by the induction of belching, by applying heat and massage, and by taking enemas.

Our part in the management of these cases consists in breaking the enema and cathartic habit. This, together with use of carbohydrate restrictions and thereby gradually increasing the tolerance to carbohydrates, will solve the problem.

It is to be noted how closely the symptoms of a disordered function of the colon simulate those of a chronic non-calculus cholecystitis. When possible, it is well to have cholecystograms taken to rule out the gallbladder. This, to our way of thinking, is the greatest contribution that the Graham dye technique has made to gastroenterology, *i.e.*, by saving gallbladders that might otherwise be sacrifices. If this is not possible, then it is always possible to put the doubtful case on a carbohydrate restriction and break up the cathartic and enema habit. In other words, to use the therapeutic test.

Since the manifestation of an irritable colon is so protean and functional derangement of the colon can be produced reflexly, it is no surprise to learn that, with the present tendency to look upon indestructive abdominal distress as colonic in origin,

a number of extracolonic infections may be overlooked. Of the diseases which simulate colon disorders, those of the urinary tract are the most frequent. It is, therefore, of the greatest importance, when confronted with a case of chronic abdominal distress, to bear in mind that a kidney stone or a stricture of the ureter may be the cause of our patient's complaints.

The most important thing, I believe, which concerns us in the diagnosis of patients with gastrointestinal symptoms, is the question of ureteral stricture.

To Hunner belongs the credit of calling the attention of the profession to the two most important features of this condition, namely, the frequency of its occurrence and the exact nature of the inflammatory process which is the cause of it. The storm of protest that followed this epoch-making paper in 1916 has subsided. Today, most of the skepticism in the minds of the profession has cleared away, but the index of suspicion in our diagnostic mind is still low and needs to be raised.

Ureteral stricture is a condition in which the lumen of one or both ureters is narrowed to the extent that the outflow of urine from the kidney to the bladder is impeded at one or more points. This narrowing of the ureter is due, first, to an inflammatory process originating in the urinary tract, *i.e.*, *intrinsic*; second, to an inflammatory process in the periurethral tissue, involving the ureter by extension or constricting it as a result of scar formation (thus presupposing an external focus of infection); third, to mechanical obstruction caused by tumors, pregnancy, torsion, adhesion, or surgical interference. The most frequent causative factor seems to be the presence of a focus of infection in the tonsils, teeth, or sinuses.

While stricture may occur at any point in the course of the ureter, the most frequent sites are in the broad ligament region and in the region of the iliac group of lymph nodes just below the point at which the ureter crosses the brim of the pelvis. The great majority of strictures are bilateral. For the pathology at the site of the stricture, you are referred to the papers by Hunner and his associates.

Now it is not the purpose of this paper to tell you how the urologist confirms his tentative diagnosis by means of ureteral catheterization and pyleograms. It is your business and mine to keep our index of suspicion high and think of the possibility of ureteral stricture in our own cases so that we get them the proper attention.

Fortunately, we do not need anything but our five senses to make a tentative diagnosis, which will prove as accurate as our work with the stomach and gallbladder.

These patients come to us largely because of remote symptoms such as headaches, vague digestive disturbance, biliousness, eructations of gas, distension of the bowel with general malaise and a feeling of being constantly "all in."

Of the local symptoms, periodic attacks of frequency of urination is an outstanding one. About 75 per cent of these cases give a history of "bladder trouble." This may be so slight that the patient has not mentioned it, but on direct questioning she may admit a slight frequency when she gets nervous or excited, or a frequency at the menstrual period or in association with a sore throat or with an arthritic attack. From this simple picture we find all grades of bladder trouble up to complete incontinence.

Dyspareunia, in the majority of cases, is due to the presence of a ureteral stricture. And, too, the "falling of the womb" sensation in the presence of a pelvic outlet in good preservation and genitalia in a normally high position will generally turn out to be due to ureteral stricture.

Pain is the most constant symptom of ureteral stricture. This pain may vary from a constant, nagging pain to the most severe paroxysmal nature. The most frequent location of the pain is in the back in the lumbar region, but is also frequently found in the sacral region. Pain in the lower quadrants is the next most frequent site. The pain may or may not be referred to the urinary tract; with us, of course, it is most frequently referred to the digestive tract because of its cramps, peristaltic-like in nature. Tenderness to pressure which the patient herself notices is a common complaint. Patients frequently say that they have to discard belts and tight clothing about the abdomen because of the pain. It is not uncommon to find patients whose chief complaint is a sacral backache fitted out with a sacroiliac belt by a physician complaining bitterly or entirely unable to wear the belt *because of pressure on the abdomen.* Pain at the menstrual period is usually worse than at other times, though on questioning we find that this is not a true dysmenorrhea but an increased intensity of a pain that is present at other than menstrual times. Too often the urinalysis is misleading because it is negative. In about one-third of the cases the urine is entirely negative. In about one-half of the cases a few red blood cells, a slight increase in the leukocytes, a slight trace of albumin,

and an occasional cast or some combination of these findings will be all that is found. If the urinalysis is not done promptly and with scrupulous care, it had better not be done at all. If a renal calculus is suspected, it is important to obtain a fresh specimen and to centrifuge it; otherwise the presence of red blood cells may be overlooked. It is advisable to test for blood chemically, also, since it occasionally happens that the exuded red cells appear in the voided specimen in a laked form and these shadowy outlines may easily escape detection.

Another and better reason for doing the chemical test for blood is to aid in the differentiation between yeast cells and red blood corpuscles. These yeast cells, apparently derived from the laboratory glassware and tap water, must be kept in mind. If the first urinalysis is negative, the examination should be repeated a number of times before drawing any conclusions.

Physical examination reveals pain on pressure which may be generalized over the entire abdomen; but tenderness to pressure over certain points of the urinary tract is of greatest importance. These points of tenderness are located as follows:

1. In the kidney regions, just below the costal margin in front, with counter-pressure at the costovertebral angle posteriorly. This causes pain which is both local in the kidney region and radiates downward toward the bladder. The lower pole of the right kidney is normally palpable. Enlargements of the kidneys and hypermobility may also be determined by this palpation.

2. Of more importance than the preceding sign is the pain caused by pressure over the points at which the ureters cross the pelvic brim. These points are about one and one-half inches lateral and below the umbilicus. Pressure at these points causes pain which may be referred either to the kidney or bladder or both. On the right side this point corresponds closely with McBurney's point, and if only one side is palpated a diagnosis of chronic appendicitis may be made.

3. Pressure on either side, just above the inguinal ligament at the level of the internal ring, causes pain and frequently a feeling of fullness in the bladder.

4. By vaginal examination the base of the bladder may be palpated, and, in the fornices on each side, pressure on the ureter in the broad ligament region causes severe pain. Frequently the ureter can be palpated in this manner and can be positively localized as the source of the pain.

If we keep our suspicion high enough to make a careful physical examination with the above points in mind, we can make a reasonably accurate diagnosis which will prevent us directing the patient to the wrong specialist or nursing them along as neurasthenics. We may or may not be able to palpate the kidney, although in women the right kidney can usually be felt. As a rule, tenderness in the upper flank will be elicited. A more important maneuver in the physical examination is the palpation of the ureter where it crosses the pelvic brim, for this nearly always elicits tenderness. Frequently, the patient will refer the discomfort so caused to the epigastrium and complain of nausea, or "that old gas pain," or the discomfort is "down to the ovaries" or to the bladder, with a desire to void.

To sum up, then, it is of the greatest importance that our index of suspicion for the renal factor must be kept high whenever we meet a patient whose history and physical findings do not dovetail or in whom our findings indicate disordered gastric or intestinal function instead of organic pathology. Before we allow ourselves the danger of a diagnosis of functional derangement we must be mighty sure that we are not dealing with a non-suppurating disease of the kidney, its pelvis, or ureter; for, in the interpretation of gastrointestinal symptoms, the renal factor is a big one.

Electrodesiccation

The procedure known as electrodesiccation of the tonsils was carried out by one skilled in the technique. A piece of diseased tonsil was covered over by a fairly thick, smooth, white scar. The appearance of the throat some months later was such as to warrant a laryngologist in saying that there had been a complete removal of the tonsil. It may be said that portions of diseased tonsil are frequently left following surgical tonsilleltomy. That is true, but it is only by electrodesiccation that such fragments can be so completely hidden from view. In spite of the improvement which has been made in the technique of destruction of the faucial tonsil by high frequency current, Frank J. Novak, Jr., and Michael Zeller, Jr., Chicago (*Journal A. M. A.*, Dec. 29, 1928), do not see any evidence of sufficient validity to change their opinion that the method is inadequate and unsatisfactory, and that it can not in any manner compete with the accepted present-day methods of surgical tonsillectomy.

CALCIUM CHLORIDE INTRAVENOUSLY AS A TREATMENT FOR PULMONARY TUBERCULOSIS *

By C. H. HALL, M.D.
Elkins, W. Va.

In the treatment of pulmonary tuberculosis under the old régime of watchful waiting, in which the patients were kept at bed rest in the hope that kind nature would effect a return to health, is now more and more being challenged by investigators as being only negative, and with a feeling that something more positive is due the sufferer and that the profession is not living up to its best traditions in being satisfied with placing the patient in the best possible environment and making no effort to combat the disease actively.

It must be admitted that this negative mode of treatment has done much to lower the mortality and reduce the incidence of this disease, and it is also true that it has brought some relief and possibly saved some lives in such diseases as scarlet fever, diphtheria, diabetes, pellagra, and syphilis; but we are all familiar with the brilliant results obtained when the profession abandoned a complacent attitude for one of vigorous conquest.

In most, if not all, the brilliant achievements of medicine, opposition, criticism, ridicule, and sometimes even persecution were encountered; however, this attitude may have served a useful purpose in winnowing the chaff from the grain, but I think that, sometimes, conservatism becomes too conservative and countless lives are lost and much suffering goes unassuaged.

In the treatment of tuberculosis, many and varied have been the methods and procedures employed and investigated with varying degrees of success or failure, some of which may be briefly summarized as follows: Under light rays we have heliotherapy and röntgenography; under specific therapy we have tuberculin, Freidmann's vaccine, Spahlinger's vaccine, Marmorek's serum, autoserotherapy, Calmett's B. C. G. mixture, and Négre and Boquet's antigen.

Surgery has made notable contributions toward its eradication, such as artificial pneumothorax, thoracoplasty, pneumolysis, and phrenicotomy, with perhaps some others.

Chemotherapy is a field in which countless efforts have been made to check or cure the disease. A few of the drugs used for this purpose are as follows: Creosote and its derivatives, arsenic iodine with its combinations, ichthyol, methylene blue, copper, gold urea, cod-liver oil, and lime.

It is to one salt of this latter drug that I wish to call your attention tonight.

The employment of lime in the treatment of tuberculosis is somewhat empirical, but its use has been stimulated by observation dating back into the early history of the disease, and, in spite of its appropriation by quacks and the very active criticism from part of the profession, an active interest still survives in this drug and its possibilities for good.

Brown and Hayes state that the tubercular bacilli develop a fatty acid during their growth. This seems to bear out the fact which is under controversy—that there is an increasing acidosis throughout the progress of the disease, or at least a decreasing of the normal alkalinity and demineralization of the system.

The use of lime has been criticized because the blood calcium remains about normal during the course of the disease, but when we consider that the blood calcium is perhaps not one-thousandth of the total of the lime contents of the body, and that the blood calcium is very inconstant, it is reasonable to believe that the blood is only a carrier of calcium to the tissues for storage, or away for disposal.

Some one has suggested that the demineralization of the tissues is caused by a hypersecretion of the parathyroid gland, brought about by stimulation from the toxic product of tubercular foci, and is an evident effort on the part of nature to repair the ravages of the disease; and, because of this fact, the body reserve is progressively depleted until exhaustion is complete and the germs have won their long-drawn-out battle against their host.

This conclusion was made possible by the experiments of Bergheim and Percival, which proved conclusively that the increased blood calcium brought about by the injection of the parathyroid hormone was not an increased absorption but was drawn from the tissues.

As it has been proven, rather conclusively, that tuberculosis does rapidly decrease the systemic calcium and that possibly the most important factor in the elimination of the tubercle is the deposition of calcium salts, it would seem that an adequate supply of lime is one of the prime essentials in curing this disease.

Lime, in its many forms and combinations, has been the subject of much investigation in the treatment of tuberculosis for many years, but usually it was given by the oral route with rather disappoint-

* Read before the Harrison County Medical Society at Clarksburg, West Virginia.

ing results; but Bergheim finds that its absorption is variable and that, in rachitic animals, calcium is absorbed from the small intestines only to be excreted again into the large. This lack of permanent absorption possibly accounts for its apparent failure when given through the alimentary tract.

The particular form of this drug and the manner of its administration that interests us tonight is the intravenous injection of calcium chloride.

Much of the criticism that has been directed at the intravenous injection of calcium chloride is to the effect that it is toxic to the myocardium, and under certain conditions this is true; but it has been found that the toxicity is largely controlled by the concentration of the solution, which, of course, controls the concentration of the blood.

Cushny (1924) stated that calcium, injected directly into the blood stream, acted much like digitalis, in that it accelerated and strengthened the heart-beat in small doses, but in large doses it seemed to be poisonous, tending to bring the heart to a standstill. Newmann (1920) reported favorable results in cases of hemorrhage and of acute and chronic diarrhea from the intravenous injection of 5 to 10 c.c. of a ten per cent solution of calcium chloride. Grove and Vance (1921) pointed out the value of the intramuscular injection of 100 minims of a one per cent solution of calcium chloride in cases of hemorrhage. Walters (1921) reported the use of calcium chloride in ten per cent solution intravenously in the preoperative preparation of jaundiced patients. Walters and Bowler made comprehensive studies of the effect of intravenous injections of calcium chloride on the electrocardiograms of dogs when a ten per cent aqueous solution of the salt was used and injected at the rate of 1 c.c. per minute. The injection of toxic doses into the blood stream of dogs brought about various alterations in the rate disturbance of conduction, ectopic origin of impulse, and, when carried to a still further point of toxicity, disturbance of the fundamental coördination of the heart and ventricular fibrillation, which was followed by death. Moderate doses caused only an alteration of the pulse rate. Seelig (1925), calling attention to the possible ill effects upon the heart and subcutaneous tissues by the intravenous injection of a 10 per cent solution of calcium chloride, recommended, in its stead, a dose of 50 c.c. of a one per cent solution, which would not cause subcutaneous sloughing, and which, particularly when injected slowly, had little if any deleterious effect upon the heart.

Lloyd (1926) acted as subject in an experiment to determine the toxicity of calcium chloride intravenously in different solutions, and his conclusions were that, in the first experiment when 50 c.c. of a one per cent solution of calcium chloride were injected intravenously, no subjective or objective symptoms beyond the normal were observed; but when a ten per cent solution was given, he became dizzy, and this was followed by cyncope, respiratory failure, upward deviation of the eyes, dilatation of the pupils, rigor of the masseters, asphyxial extensor spasm, and rigidity.

Rosen (1912) administered calcium chloride intravenously and got results that were superior to those obtained by the oral method. He used this form of therapy, not to cure any special morbid manifestations, but as a systematic treatment of the disease. He proved, by investigation, that one to five per cent are well borne by dogs and solutions of one per cent by smaller animals, while five to ten per cent solutions are badly tolerated, the animals succumbing with symptoms of intoxication. In incipient cases, he found one series of fifteen injections usually sufficient, but advised that, as a precautionary measure, it should be repeated even in the absence of physical signs.

In the relatively early second-stage cases, bacilli disappeared from the sputum after the first course of treatment. In spite of this, and even though there are other signs of improvement, such as gain in weight, dropping of temperature, etc., one should not be contented with a single series of injections. He claimed amelioration is evidenced by increase in weight, disappearance of cough and of tubercular bacilli from the sputum, and the lowering of temperature. Physical signs clear up more slowly than the other manifestations of the disease. In a one and five-tenths per cent solution used by him, he found no toxic effect under 300 c.c. dosage.

These studies of the therapy of lime would indicate: (1) that a certain quantity of lime is necessary to health; (2) that a depletion of the body lime content encourages the contraction of tuberculosis or the dissemination of the disease from an already existing focus which is estimated to exist in 90 per cent of all civilized adults; (3) that an excess of lime is one of the principal factors in healing an existing tubercle; (4) that calcium chloride, given in a dilute solution near isotonic with the blood serum, may be given in such quantities that a very large dose of the salt may be given without being toxic; (5) that the absorption of lime from the ali-

mentary tract is very slow and incomplete; (6) that the parathyroid gland, in its effort to produce an excess of lime for the calcification of tubercles, depletes the normal supply in an ever-increasing rate as the disease advances.

As to our own experience with this calcium chloride intravenously for the treatment of tuberculosis, I shall not burden you with a long list of case reports, but will simply give you conclusions drawn from experience, and summarize my ideas as to what may be expected from this line of treatment.

Our first case was a post-pneumonic condition which proved to be a miliary tuberculosis, and, to our great surprise, responded promptly, and the patient is living today in very good health. Other cases followed, with the majority of the first- and second-degree cases regaining health to the degree that clinical symptoms were entirely absent, and they are now living active, healthy lives. No third-degree case became entirely arrested, but even in these cases some improvement was evident, and we believe that, under favorable conditions, this treatment gives more promise of late arrest than any other treatment so far developed.

The earlier cases in this series were all treated in the Davis Memorial Hospital, and Dr. W. S. Magill and Dr. B. I. Golden, of that institution, were associated in the work, Dr. Magill having observed Rosen's work in Russia. Since then, I have been carrying out this treatment in private homes, with very satisfactory results.

The number of patients treated, in which I have been associated or have handled alone, is 78; and I regret to say that a great many of these have not been kept under observation and no definite statistics are possible. However, this much can be said: No case has been injured by this treatment, however bad the condition may have been; no patient has failed to receive some benefit, although in some cases this was only temporary. Quite a large majority of first- and second-degree cases have been restored to an active, healthy life. In only one arrested case has a recurrence been noted, and this was following childbirth; in this case, further treatment was given and there again seems to be rapid progress toward health. In my immediate neighborhood there are eighteen patients whose cases have been arrested, with only one recurrence, as noted above, and in most of these cases three to four years have elapsed since treatment. It may be objected that my experience has been empirical, unscientific, and uncontrolled. I will agree that this is all true, and I regret that my facilities were not such that a more accurate observation could have been made and continued; but my observation of this treatment has led me to believe that if it is used it will prove a very valuable addition to the sanatorium treatment now carried out.

Summary.—While not a specific for tuberculosis, a large majority of first- and second-degree cases of tuberculosis are arrested by the intravenous injection of calcium chloride, administered in the home. The more nearly sanatorium conditions can be approximated, the better are the results.

Calcium chloride, in proper dilution, is not toxic.

No patient who has received this treatment has failed to realize some benefit, ranging from slight to complete arrest.

Hypervitaminosis

From data relating to the therapeutic potency of irradiated ergosterol in protecting experimental animals against rickets on an otherwise rachitic diet, it has been estimated that one part in many millions of food suffices to secure the prophylactic purpose. In human infants a daily dosage of considerably less tha n4 mg. (6/100 grain) has already been demonstrated to be curative in cases of unmistakable rickets; and there is little doubt that this quantity may be considerably larger than the minimal protective dose. It should not be surprising if larger quantities of such potent substances would exert a pronounced effect on the organism, in directions that may not always be merely beneficial. There have been reports of experiments indicating the possibility of inducing hypercalcemia through use of large doses of irradiated ergosterol. There is no longer any doubt that harm may result from extremely excessive doses of irradiated ergosterol in rachitis animals. The hyprevitaminosis to which reference has been made in experiments has involved the use of truly enormous doses. There are no evidences of harm, but many indications of striking benefit, from the customary intake of fat-soluble or other vitamins. Toxic effects at such enormous dosages should not in any way discourage the rational use of the properly standardized materials. For the benefit of those who wish to be on their guard for evidences of effects beyond the desired benefit, it may be stated that hypercalcification (eburnation), abnormally high blood-pressure and hypercalcemia need to be borne in mind.—*Journal A. M. A.*, April 13, 1929.

DR. JESSEE BENNETT *
(1769–1842)
PIONEER SURGEON

DR. AQUILLA LEIGHTON KNIGHT
(1823–1897)
HUMANIST

Old Virginia Doctors: "Who saw life steadily and saw it whole."

By JOSEPH LYON MILLER, M.D.
Thomas, W. Va.

On the 14th day of January, one hundred and thirty-five years ago, a young pioneer physician in the Valley of Virginia performed an operation that, had it been reported at the time, would have assured him a place of honor in the medical history of America.

Believing that, even at this late date, the case should be presented to the profession in Virginia, I am now offering this account of it, hoping the evidence will be sufficient to warrant belated recognition being bestowed upon the memory of Dr. Jessee Bennett, who did the first successful Césarean section in America.

The first appearance in print of this case was in 1891 in *The History of the Great Kanawha Valley*, Vol. II, page 265. The chapter on the medical history of the valley was written by Dr. A. L. Knight, who knew Dr. Bennett well, and had his information from two persons present at the operation. In addition to my interest in the case from the standpoint of medical history, I have a further interest due to the fact that Dr. Bennett spent the last forty-five years of his life in my native county of Mason and for many years was my grandfather's family physician. Dr. Knight was also a native of Mason and a lifetime friend and physician of my father. The fuller details of the operation were given to me personally by Dr. Knight, as it was not suitable to publish them in a popular local history, and check with the traditions held by Dr. Bennett's descendants, who are prominent citizens of the Great Kanawha Valley. From these sources I have the following account of Dr. Bennett and the Césarean section he did on his own wife on the 14th of January, 1794, in Rockingham county, Virginia.

Jessee Bennett, of Norman-French ancestry, was born July 10, 1769, at Frankfort, Philadelphia county, Pennsylvania, and died at his home, "Riverview," Mason county, Virginia, July 13, 1842. After reading medicine with a physician in Philadelphia, he completed his education at the University of Pennsylvania, and is said by a contemporary to have been "a thorough anatomist and most excellent surgeon." In 1792 he settled in the Valley of Virginia to practice his profession, and on the 8th of April, 1793, was married to Elizabeth Hog, daughter of Major Peter Hog, a graduate of the University of Edinburgh, a prominent officer in the French and Indian War, pioneer lawyer of the valley, and first clerk of Rockingham county, from 1777 till his death in 1782.

THE OPERATION

In due course, Mrs. Bennett came to her first and only confinement. Owing to a contracted pelvis, or other obstruction not known definitely, assistance was called in the person of Dr. Alexander Humphreys, of Staunton. After consultation and an unsuccessful attempt at a forceps delivery, it was decided that but two courses were open to them—either craniotomy or Césarean section. Mrs. Bennett, thinking she was going to die anyway, insisted that the child should be saved; so, over the protest of Dr. Humphreys, preparation was made to do the operation, which, at that time, was one almost unheard of on the living mother anywhere in the world. Dr. Humphreys refusing to undertake so formidable an operation, Dr. Bennett proceeded with it himself. The details related by those present are: Mrs. Bennett was given a large dose of laudanum, which, with her previous weakness, quickly put her to sleep. She was then placed on a table made of two planks laid on a couple of barrels, and, with two negro servant women to hold her, Dr. Bennett, with one quick sweep of the knife, laid open the abdomen and uterus. Enlarging the opening in the uterus with his hands, he quickly lifted out the child and placenta. Before closing the wound, which he did with some stout linen thread used in making heavy clothing, he remarked, "This shall be the last one," and proceeded to remove both ovaries, or, in the language of one of the witnesses, "he spayed her." Much to the surprise of every one, both Mrs. Bennett and the child, a daughter, survived, Mrs. Bennett dying many years after their removal to Mason county and the daughter at the age of seventy-seven in 1871. The account of the operation was related to Dr. Knight by Mrs. Bennett's sister, Mrs. William Hawkins, and one of the

* Originally published in the *Virginia Medical Monthly*, January, 1929.

negro women, both of whom were in the room all during the operation.

Before proceeding with the account of Dr. Bennett's later years, I think it best to state more fully Dr. Knight's connection and interest in the Bennetts. About a mile from the Bennett home on the Ohio River lived the Knights, friends and patients of the old doctor . Though young Knight knew Dr. Bennett well and was nearly twenty years old when the old doctor died, he naturally had never questioned him regarding the unusual manner of his daughter's birth, though he knew of the case from neighborhood gossip; but as soon as he had finished his own medical education a few years later he proceeded to satisfy his curiosity by getting all the information possible from all then living who knew about it. These included not only the daughter born by the operation (at this time the wife of Dr. Enos Thomas), but fortunately also the two eye-witnesses named above. When Mrs. Hawkins was asked if she knew why Dr. Bennett had never reported the case to some medical society or magazine, she said that she had heard him say that "no strange doctors would believe that operation could be done in the Virginia backwoods and the mother live, and he'd be damned if he would give them a chance to call him a liar," and that, on another occasion, she heard him say that "no doctor with any feelings of delicacy would report an operation he had done on his own wife." At this time a Césarean section with living mother and child was practically unknown anywhere in the world, even in the greatest medical centers. It antedates by thirty-three years that of Dr. John Richmond at Newtown, Ohio, which is given credit as the first in America. The oöphorectomy done by Dr. Bennett preceded by seventy-eight years that of Dr. Robert Battey of Rome, Georgia, who is given credit as the first to advise and remove non-diseased ovaries. It even precedes McDowell's famous ovariotomy by fifteen years. Newtown, Ohio, being less than two hundred miles away from Mason county, affords speculation as to whether Dr. Richmond may not have known Dr. Bennett, or at least have heard of his operation and its success, and from them drew courage to proceed with his own when the necessity arose.

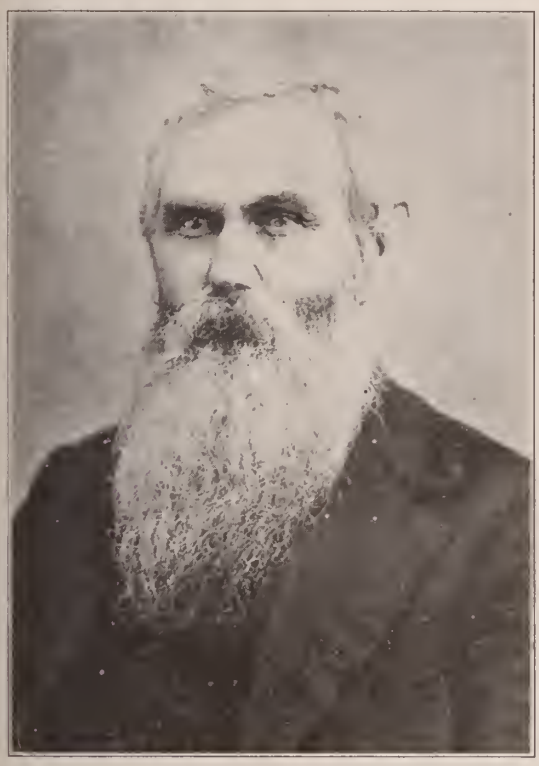
In 1795 Dr. Bennett joined the army as a surgeon in the "Whiskey Rebellion," and two years later, in company with his wife's brother, Thomas Hog, and sister, Mrs. Nancy Hawkins, and their families, removed with his family to settle on a tract of nine thousand acres of land granted to his father-in-law, Major Peter Hog, on the Ohio River about six miles above the mouth of the Great Kanawha. At this time he was the only doctor in a territory along the Ohio and Kanawha rivers for fifty to a hundred miles from his home, and so great was his reputation that even after competition came in he was still called far and wide, particularly in all surgical cases. In 1804, when the new county of Mason was cut off of Kanawha county, Dr. Bennett was one of the justices of the first court, major in the county militia, and in 1808 and 1809, in company with my own great-grandfather, Colonel John Henderson, represented the county in the Virginia Assembly. In the War of 1812 he served as surgeon in the Second Virginia Regiment. Aaron Burr tried hard to persuade him to join his expedition and to turn over all the arms and military stores of the

DR. JESSEE BENNETT

militia. This caused the old doctor to be summoned to Richmond as a witness against Burr, and while there he had his miniature painted, which is reproduced here and is at present owned by his great-granddaughter, Mrs. Mary Shaw Cargill, of Winfield, West Virginia. He was a small, active man, with reddish hair, and, it is said, had the temper

which usually accompanies it. Many interesting anecdotes have been handed down regarding the old doctor in his practice, and his sporting proclivities as a game hunter and owner of the first racehorses in that section of Virginia. To relate many of these would prolong this paper too much, but perhaps one or two will not be out of place.

He delighted to relate an experience when he was bested in an obstetric case by a "Thompsonian" or "yarb doctor." These woods doctors were audacious in proportion to their ignorance of pathology, and would undertake to cure anything from pneumonia to cancer with their roots and leaves. On this occasion one of the regular profession, several miles away



Dr. A. L. Knight at age 65. Photograph owned by his daughter, Mrs. Robert L. Archer, Huntington, W. Va.

in Mercer's Bottom, had a difficult labor case and sent for Dr. Bennett in consultation. After examination he advised forceps, and while they were on the front porch of the home discussing it they saw "Old Root and Yarb," as he was known, coming down the road, carrying a huge pair of saddlepockets swung over his shoulder. For the sake of a little amusement it was proposed that they call him in and state the case and ask for his advice. When this was done he replied, "Well, gentlemen, have you sneezed her? Before using them hurtful things I'd sneeze her." Feeling that he could do no harm, they said, "Suppose you try it," which he did by the aid of snuff from a large, old pewter box he carried. To their great surprise, a few minutes later a new citizen was claiming his rights with a vociferous voice, and "them hurtful things" were not needed.

Dr. Bennett's lack of orthodox religious belief is the foundation for another good story. This lack, however, did not deter the clergy of all denominations frequently accepting his hospitality, doubtless each one hoping to land the old doctor in his own particular fold. One night in June, 1815, the pastor of a neighboring church, in riding his circuit, stopped at Dr. Bennett's. At this time the Ohio River was quite high, and further rain during the night backed it up in Oldtown Creek till it was unfordable. As it was necessary for the Rev. Mr. Smithers to proceed on his journey the next morning, Dr. Bennett took him on behind him on his big bay horse and swam the creek. On the opposite bank they met an old servant of Colonel Charles Lewis, who lived on that side, and Dr. Bennett said to him, "Well, Kyer, if old Tom had sunk and drowned Mr. Smithers and me, which one would Old Nick have grabbed first?" "Marse Smithers," laughed Kyer, "ca'se he ain't sho' o' him an' he don sho' o' you now, sah."

A few years after settling on the Ohio, Dr. Bennett replaced his first log house with a substantial brick residence, still standing, and I still have many pleasant recollections of the unstinted hospitality of "Riverview" when owned by the old doctor's nephew, Mr. Walter Hardin Hog, whose string of fine horses were known on many of the racetracks of West Virginia, Ohio, and Kentucky.

DR. KNIGHT

Since at this late date the account of this first successful Césarean section in America must stand largely upon the veracity of the doctor who gathered the facts and first reported it, I believe that an account of the life and character of Dr. Aquilla Leighton Knight will not be out of place.

He was born on Christmas day, 1823, about a mile from the home of Dr. Bennett. At the age of fourteen he had acquired all the knowledge the local teachers could impart, in addition to doing a vast amount of outside reading, or, as the Hon. John Hall, a wealthy neighbor, remarked in later years, "Dr. Knight read every book in my library before he was fifteen years of age." His father then was fortunate enough to secure as a tutor for him an Englishman named Alexander H. Porter, a graduate of Cambridge University, England, and later a

professor in Oxford University, Ohio. The two years' study with Professor Porter included Latin, French, German, higher mathematics, and English, and he had so crowded those two years that his preceptor declared him as proficient as any collegiate with the degree of A.B. After teaching for four years he read medicine with Dr. Daniel Couch, of Point Pleasant, later entering the medical department of Western Reserve University at Cleveland, Ohio, from which he was graduated in March, 1850, second in a class of seventy-six. Returning

DR. AQUILLA LEIGHTON KNIGHT
(Silhouette owned by the author.)

home, he built up the largest practice in that part of the Ohio Valley by the time the Civil War came on. In July, 1861, he entered the Confederate army as a surgeon, and, after being in several battles, was taken prisoner and confined in the Wheeling jail for nearly a year, then released on parole till the close of the war. The war swept away many thousand dollars' worth of slaves and other property, leaving him only his home; but, like the rest of the Confederates, undaunted, he started to rebuild his shattered fortunes.

Dr. Knight's student days did not end when he left college, but all his life he studied and read widely, not only in the literature of his profession but also in the sciences of chemistry, botany, astronomy and geology, the classics, and medical and general history. His most prominent natural talent was for drawing and painting, which afforded him greater pleasure than all the rest. He developed this so highly that several of his paintings of a historical character were hung on the walls of the state capitol at Charleston and were lost in the fire that destroyed that building a few years ago. In speaking of Dr. Knight, Dr. Robert Hamilton, himself a well-known physician of the Kanawha Valley, said: "Dr. Knight will have much to answer for; nature has given him the full ten talents, while some of us have but one, and others but four or five at most. Why, he is artist, poet, mechanic, musician, scientist, linguist, and regarded by all who know him, as I do, a sone of the most skillful physicians and surgeons between Pittsburgh and Cincinnati." He was an active member of the Mason County Medical Society, the Meigs County (Ohio) Medical Society, the Ohio Valley Medical Society, and the West Virginia State Medical Association, and two or more times was president of the first three and vice-president of the latter.

It is with pleasure and happy recollections that I here pay tribute to the memory of Dr. Aquilla Leighton Knight as one of the finest men I have ever known, a splendid specimen of that fine type of old Virginia gentlemen physicians. His wide acquaintance with the world's best literature, and sympathetic understanding of humanity in its various phases as a doctor sees it in many years' practice, made him a most delightful companion and mentor. To the inspiration derived from him more than to any one else do I owe my love for the cultural side of medicine and its history. I can not close without quoting something he said to me many years ago in his office as I was leaving to enter college: "I have won many triumphs, but the grandest has been the conquest of myself."

The lives of such men as Dr. Bennett, Dr. Knight, and Dr. Mettauer, in their restricted environment as country practitioners in Virginia, though without the fame that same to some of their contemporaries, as McDowell, Long, and Simms, make us proud of the old country doctors of the South.

SARCOMA OF THE BREAST *

By C. A. HAMANN, M.D.
Cleveland, Ohio

It is generally recognized that sarcoma is one of the rarer pathological conditions affecting the mammary gland, and in this paper are included reports of five cases observed and operated upon.

Incidence.—Deaver, in 1917, cited 838 cases reported in the literature, prefacing his tabulation, however, with the statement that the figure was somewhat inaccurate, due to difficulties afforded by careless and faulty classification.

Fifteen cases of mammary sarcoma operated upon in the Lankenau Hospital and cited by Deaver represented 2% of the total of breast tumors observed over a period of 16 years.

Guest and Wilensky, in 1915, in reporting 22 cases of breast sarcoma, found that in a series of 282 malignant tumors of the breast 7.7% were sarcomatous. This figure is unusually high in comparison with statistics given by other observers.

Williams, in an analysis of 13,823 primary tumors, found 1,081 sarcomata, 99 of the latter of the breast. Thus, in this series 7.8% are sarcomatous and .017% of all the tumors recorded were breast sarcomata. In 2,422 breast neoplasms 3.5% were found to be sarcoma.

Rodman, quoted by Ewing, in a series of 5,000 cases of breast tumors, found a sarcoma incidence of 2.78%.

Sex.—The occurrence of breast pathology, of course, predominates in the female, and Fitzwilliams, reviewing the literature until 1919, found only 44 cases of sarcoma in the male breast.

Age.—The age incidence is greatest between 40 and 60.

Symptoms.—The size of the tumor may remain stationary for months or even years after it is first noticed, but when growth ensues it is, as a rule, very rapid, and these tumors usually attain gigantic proportions before the patient comes under the observation of the surgeon.

Most frequently the tumor is partly cystic, partly solid. The overlying skin is not adherent in the earlier cases and the tumor mass is movable upon the underlying pectoral muscles. The overlying veins are usually markedly distended. Later, the expansion of the tumor, aided by hemorrhagic and degenerative changes, stretches the skin markedly and ulceration supervenes. The axillary glands are not involved, as a rule.

In the early stages the diagnosis is often difficult, but, in brief, a large tumor of the breast, partly cystic and partly solid, not adherent to the skin and with no axillary adenopathy, is probably sarcomatous.

Pathology.—The usual classification of mammary sarcomata is into two major groups, namely, the cystic or adenosarcomata, and the true sarcoma or solid type. In regard to prognosis, the latter is the more malignant.

Another classification is based upon minute cell structure, *i. e.*, round cell, spindle cell, chondrosarcoma, etc. Of these, the small, round-cell type is the most malignant, and is the only type showing metastasis to regional lymph nodes. Next in degree of malignancy stands the small spindle-cell type, followed by the mixed and intermediate forms. Increased vascularity is characteristic of these tumors and the metastases are usually through the blood stream.

Treatment.—Radical amputation, including removal of the pectoralis major, minor and axillary adenectomy is the operative procedure of choice.

By some it is contended that axillary dissection is superfluous, since axillary metastasis is not the rule, and that simple mammectomy will suffice. However, since the true cellular characteristics and degree of malignancy can not be determined preoperatively, and since the radical operation will include a more thorough removal of the surrounding vascular connections, it seems the logical choice.

CASE 1.—Mrs. S., age 43, admitted July 5, 1921. Seven years ago noticed a small, painless lump in left breast; at that time it was the size of an English walnut. During the past year it had increased rapidly in size.

Left breast is the size of a large grapefruit. It is partly cystic and partly solid. The overlying skin is bluish in color and the superficial veins are markedly distended. In the upper outer quadrant is a small area of ulceration. No axillary or supraclavicular adenopathy.

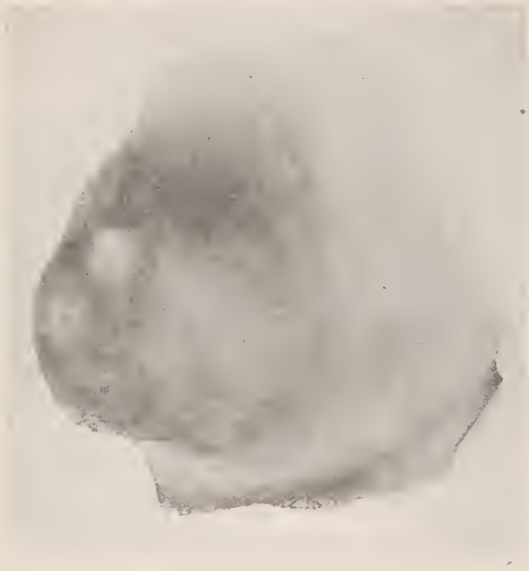
Operated upon July 6, 1921. Radical breast amputation.

Pathological report: An amputated breast with subcutaneous tissue and muscle attached. The breast is practically replaced by a large tumor the size of a football, partly cystic and partly solid. In one area superficial necrosis the size of a fifty-cent piece is

* Original paper.

Dr. Hamann's article was published without illustrations in the May issue of the WEST VIRGINIA MEDICAL JOURNAL. It is reproduced here with cuts.

seen, and on section the underlying tissue is seen to be cystic and somewhat necrotic. Parallel section of the breast causes a thick, yellowish, mucinous material to exude, and the cut surface is seen to range from whitish to reddish yellow and many areas of gelatinous consistency are evident. Section through the mass shows a characteristic growth of embryonic connective tissue elements. In parts the growth is made up chiefly of large, rather deeply chromatic,



CASE II.

nucleated cells and pale cytoplasm, while the greater bulk is composed of spindle cells. These are held in a sparse, vascular connective tissue stroma. In some of the sections gross hemorrhagic extravasation is a marked feature.

Diagnosis: Spindle-cell sarcoma.

CASE 2.—Mrs. V. D., age 40, admitted May 12, 1926. Six months ago she first noticed a firm lump in left breast, which was about one half inch in diameter. Gradual increase in size until it has reached present proportions. No pain; no discharge from nipple. Mechanical inconvenience is the only complaint.

Left breast almost wholly replaced by a tumor mass, partly cystic, partly solid. Overlying skin tense and bluish in color with markedly distended superficial veins. Mass is not adherent to the overlying skin nor to the pectoral musculature. No regional adenopathy.

Radical amputation of left breast May 13, 1926.

Pathological report: Sections show a rather typical appearance of an intra-canalicular connective tissue tumor, except that there is a marked difference in cellularity in adjacent fields. The ducts are lined with a single layer of low, columnar cells which are regular in size and shape and do not penetrate the basement membrane. The main bulk of the tumor is composed of myxomatous tissue, with areas showing considerable cellularity. Here the cells are rather large, irregular in size and shape, and occasional mitotic figures are seen.

Pathological diagnosis: Intra-canalicular myxosarcoma of breast.

CASE 3.—Mrs. K., age 45, admitted May 17, 1926. A small lump was found by the patient in the upper outer quadrant of left breast two years ago. No pain; no discharge from the nipple. For past six months it has increased very rapidly in size and an area of superficial ulceration appeared three weeks ago.

Large, partly cystic and partly solid tumor mass almost wholly replaces the left breast. Overlying skin purplish in color, and superficial veins are markedly distended. Upper outer quadrant shows an area of superficial ulceration with considerable

CASE III.

sero-sanguinous discharge. No demonstrable regional adenopathy.

Radical amputation of breast May 19, 1926.

Pathological report: Sections show entirely tumor tissue, consisting chiefly of an overgrowth of connective tissue in intracanalicular fashion. These masses of tissue vary in cellularity. In many instances the tissue is of the young connective-tissue type or myxomatous. Adjacent areas are more

cellular. Cells are elongated, irregular in size, and show occasional mitotic figures. The ducts are lined by a single layer of cuboidal epithelium, which is everywhere well demarcated from the underlying connective tissue.

Pathological diagnosis: Intra-canalicular myxosarcoma of breast.

CASE 4.—Mrs. M., age 38, admitted May 27, 1926. Eight months prior to admission noticed a small lump in the left breast. At that time it was about an inch in diameter. Four months later it was noted that the mass was increasing in size, and since then the growth has been very rapid, and patient complains of recurrent, sharp-shooting pain in the breast. No discharge from the nipple at any time. No other complaint, and general health has been excellent.

Large, solid tumor with scattered cystic areas as depicted. Overlying skin very tense, bluish in color, but not adherent to the underlying mass, nor is the tumor adherent to the thoracic wall. No regional adenopathy.

Radical breast amputation May 27, 1926.

CASE IV.

Pathological report: Specimen is a radically amputated breast, which is the seat of a large tumor about 5 inches in diameter, over which the skin is stretched but not fixed. Veins of the skin are prominent. Axillary lymph nodes are not enlarged. Section through the tumor shows its margin well demarcated but not encapsulated, and it occupies almost the entire breast.

Section of the tumor shows marked increase in the amount of stromal tissue between ducts. Ducts are somewhat irregular in size and shape and many are dilated. They are lined with cuboidal epithelium which shows no hyperplasia. Stromal tissue is tremendous in amount and varies in character in different sections, some areas being of myxomatous nature, others composed of loose connective-tissue fibrils in which are scattered large, fusiform-shaped cells which are hyperchromatic and show occasional mitotic figures.

CASE V.

Pathological report: Spindle-cell sarcoma.

CASE 5.—Mrs. F., age 52, admitted December 29, 1926. A small, firm tumor was noted by the patient in the upper outer quadrant of the right breast one year ago and has gradually increased in size without pain, and there has been no discharge from the nipple. Patient has never lactated. No other complaint.

Mass, which measures 6 inches in diameter, in right breast as depicted. No dimpling of skin or retraction of nipple. Mass is freely movable on the underlying pectorals and is not adherent to the skin. No regional adenopathy.

Radical breast amputation December 30, 1926.

Pathological report: Specimen is a radically amputated breast, in which there is an unusually large tumor, measuring about 6 inches in diameter. It is not attached to the skin above nor to the fascia below. On section the margins are well demarcated, but there is no capsule. The cut surface is moist, of a grayish color, and shows several collapsed cystic

spaces containing outgrowths of the tumor tissue.

Sections taken in various areas show practically the same picture. The ducts and acini are widely separated and show nothing unusual save some distortion and moderate epithelial hyperplasia. However, the stroma is markedly increased in amount and is composed of loosely arranged spindle or polyhedral cells which vary widely in size and shape, show rather poor differentiation and fairly numerous mitotic figures. These cells are separated by a fibrillar, edematous connective tissue. Several areas show giant cells which contain rather large, vesicular, central nuclei.

Pathological report: Spindle-cell sarcoma.

I am indebted to Dr. W. J. Sheehan for the pathological reports.

BIBLIOGRAPHY

1. Deaver, J. B., McFarland: "The Breast—Anomalies, Diseases and Treatment."
2. Williams, W. R.: "The Varities of Mammary Neoplasms and Their Relative Frequency." *Brit. Med. Journal*, Sept. 10, 1892, 576.
3. Geist, J. H.: Wilensky, A. O., *Annals of Surgery*, LXII, 11-21, 1915.
4. Fitzwilliams, Duncan C. L.: "On the Breast," 1924.
5. Ewing, James: "Neoplastic Disease," 1928.
6. Williams, W. R.: "Sarcoma of the Breast." *Medical Chronicle*, Manchester, 1893-4, XIX, 289-361.
7. Williams, W. R.: "Diseases of the Breast." "Twentieth Century Practice of Medicine," XVII, 542.

The Diagnosis of Icterus Neonatorum

Jaundice, in varying degrees of intensity, is extremely common in the newborn. It has been variously estimated that the condition is found in from seventy-five to eighty per cent of all infants. Indeed, the incidence is so great and the morbidity so slight that the term *physiologic icterus* has often been applied.

A great preponderance of the cases are slight and clear up quickly, the infant presenting no signs of illness and requiring no treatment. While a cursory examination of these infants with an offhand diagnosis of icterus neonatorum will, in the vast majority of cases, be correct, it will occasionally be wrong—and wrong often enough to cause the careful physician to make a differential diagnosis in each case.

The causes of jaundice in the first few days of life are icterus neonatorum, septic infection of the newborn, congenital obstruction or obliteration of the bile ducts, acute duodenal indigestion, congenital syphilis and congenital icterus.

In icterus neonatorum the child is not ill, the temperature is not elevated except from some other cause, the stools show the presence of bile, and there is no bile in the urine. The liver and spleen are not enlarged, and the condition clears up spontaneously in a few days.

In septic infection of the newborn the child is sick; there is an elevation of temperature and a leukocytosis. There is often a hemorrhagic condition with a tendency to hemorrhage. The liver is usually enlarged, and often the spleen; while other evidences of sepsis are usually present.

In congenital obstruction or obliteration of the bile ducts, the jaundice is a permanent condition, while in icterus neonatorum it is transient. The stools become white and pasty, due to absence of bile, while the urine contains bile in abundance. It should be remembered, however, that there is a form of bile pigment that is colorless, the so-called leukohydrobilirubin, and in doubtful cases it is well to apply tests for this substance. Again, it is possible that, in severe jaundice, bile pigments in small amounts may be excreted through the intestinal mucosa; therefore, a positive test for bile in the stools is not *prima facie* evidence that the bile ducts are patent.

Acute duodenal indigestion, with acute duodenitis and a resulting "catarrhal jaundice," is extremely rare at this age, and will be characterized by moderate elevation of temperature, the presence of bile in the urine and absence of bile in the stools.

In jaundice due to congenital syphilis, the liver and spleen are enlarged, the child's nutrition is poor, bile is present in the stools, and other evidences of syphilis will be found.

Congenital family, or acholuric, icterus is rare. In this condition the jaundice is present at birth, the liver is usually much and the spleen somewhat enlarged, and there is bile in the stools. There is also a history of jaundice in other members of the family.—*Claud L. Holland, M.D., F.A.C.P., Fairmont, West Virginia.*

Hemorrhagic Disease

A biochemical study made by I. Newton Kungelmass and John E. Tritsch, New York (*J. A. M. A.*, Feb. 16, 1929), of the clotting components of the blood from the second month of pregnancy to term in a woman who had given birth to five infants, three of whom, and possibly a fourth, had had true melena neonatorum, showed prothrombin deficiency analogous to that observed in true melena neonatorum. Nutritional therapy of the mother throughout pregnancy developed and maintained a normal maternal blood before birth. The fifth pregnancy terminated in the birth of a normal, nonbleeding infant. This case is suggestive of the possible value of prenatal treatment in bringing about the physiologic perfection of the newborn.

CASE REPORTS

PYOMETRA

By C. B. PRIDE, M.D.
Morgantown, W. Va.

Pyometra is a rather rare condition, especially in young women. I wish to report the following case because the patient is a woman twenty-eight years old and had a rather large submucous fibroid. The patient is married and has one child six years old; she had one miscarriage, of three months' duration, two years ago. The only disease she has had was typhoid fever in 1919. For the past two years she has had pain of a dull, aching nature in the left lower abdomen. Her menstruation has been practically regular until two months prior to her operation. At this time she started to menstruate at the regular time and menstruation has continued more or less the entire time, and at no time has it been excessive. The pain in her left side, that she had complained of for considerable time, was never very severe, and only bothered her when she exerted herself. She describes the pain as being of a dull, bearing-down character. She has lost some weight, but she does not know how much. She has had no previous operations, and her menstrual periods have been what she considered normal since she first started to menstruate.

Vaginal examination revealed a marital outlet, cervix normal; the lateral structures could not be made out, but the uterus was enlarged to a mass which corresponded to a three- or four-months' pregnancy. There was a small amount of hemorrhage from the cervix, but the uterus was not tender. Her temperature at the first examination was normal. The patient appeared to be quite anemic.

She was sent to the hospital, and two days later she began to run fever which went up to 102° and 103° in the evening and down to 98° and 99° in the morning. The white blood count was 20,000, hemoglobin 70, urine negative, and red blood count 3,000,000. She was kept under observation for several days, and after resting in bed the temperature subsided somewhat but never was normal. She passed some blood clots and a few shreds of mucous per vagina.

At operation the cervical canal was open and a probe could be easily inserted for two and one-half inches, and the wall of the uterus seemed fairly regular. The uterus was movable under anesthesia, and about the size as previously described.

Low midline incision was then made; the uterus was about the size of a three and one-half months' pregnancy, and its outline was normal, and felt soft. The tubes and ovaries were normal; no evidence of disease any place. Inspection and palpation would lead one to think that, had the fever not been present and the uterine cavity was probed and found to be about the normal size, a pregnancy was present. It was decided to do a hysterectomy.

In removing the uterus the wall was quite friable and it ruptured when tenaculum forceps were applied and at least 500 c.c. of muddy-colored pus escaped. Supracervical hysterectomy was done. The uterus was opened and within the cavity of the uterus was a fibroid symmetrically placed, about the size of a baseball. The fibroid was quite friable and necrotic. It is very likely the pyometra was caused by the necrotic fibroid. The pus was in the wall of the uterus and not in the uterine cavity.

This case is of particular interest because an infected pregnancy was suspected. Two years ago, just before the patient aborted, she denied having missed any periods. She admitted recently, however, that she had missed three periods at that time.

The common causes of pyometra are: stenosis of the cervix with retained blood which becomes infected; degenerating polypus or malignant tumor; foreign bodies inserted into vagina or uterus, and injuries following operations, resulting in some obstruction of the cervical canal.

ABSTRACTS

The Bacteriology of the Blood and Joints in Chronic Infectious Arthritis

Under this title, Cecil, Nicholls and Stainsby contribute a very illuminating article to the May issue of the *Archives of Internal Medicine*, in which they report their experimental work on seventy-eight patients suffering from the form of chronic arthritis which has been variously denominated chronic infectious arthritis, rheumatoid arthritis, arthritis deformans, and atrophic arthritis. From the majority of these patients a streptococcus was isolated by prolonged culture which, upon repeated injections into rabbits, produced a non-suppurative arthritis with a microscopic picture in the synovial membrane very closely approximating that seen in the human. One of the most promising features of this work is the fact that in a goodly percentage of their cases they were able apparently to sterilize the blood stream and to afford marked relief by a vaccine made up

from what they call the "typical strain" streptococcus.

This article so well summarizes Dr. Cecil's address before the Central Tri-State Medical Society at Huntington last October that we are quoting their comment and conclusions.

"In the early part of this article we have shown what confusion has existed in the minds of investigators concerning the etiology of chronic arthritis. Furthermore, we have pointed out that, even among bacteriologists who have at times obtained positive cultures from the blood or from the joints of arthritic patients, there has been marked discrepancy in the results obtained. It was because of this confusion and doubt as to the etiology of the disease that the present study was undertaken.

"Altogether, seventy-eight patients with chronic infectious arthritis have been subjected to blood cultures. Of these seventy-eight cases, forty-eight, or 61.5 per cent, yielded a streptococcus. Of the forty-eight strains of streptococcus isolated from blood cultures, forty, or 83.3 per cent, were found to be culturally and biologically identical and presented the appearance of attenuated hemolytic streptococci. Of the eight remaining strains, six were classified as Streptococcus viridans, two as Streptococcus nonhemolyticus. In this report the predominant strain has, for lack of a better name, been referred to as the 'typical strain.' In the earlier part of our work, we were disposed to look on this dominant organism as an atypical Streptococcus viridans because of its capacity to produce some green coloration on blood agar plates. However, after several generations on artificial mediums, the typical strains all showed definite hemolytic properties, not so marked as typical Streptococcus pyogenes, but sufficient to produce a zone of hemolysis on blood agar plates and considerable reddening in blood broth. Furthermore, the reactions of the 'typical strains' on sugars were consistent and correspond to those of the beta type of streptococcus. Our hesitancy in classifying this organism was not dispelled when we sought the opinion of several bacteriologists. One called it Streptococcus alpha prime (a subvariety of Streptococcus viridans); two considered it Streptococcus hemolyticus; while a fourth was unwilling to express a positive opinion. Dr. J. Howard Brown, who has had a large experience with streptococci, wrote:

" 'In spite of the slight evidence of methemoglobin formation, I think I would regard these streptococci as of the beta type because there is no real zone of methemoglobinized corpuscles next to the streptococcus colonies. This is also substantiated by the fact that serum broth cultures produce complete hemolysis of washed rabbits' cells in less than two hours.'

"We are very much disposed to accept Dr. Brown's opinion and call this 'typical strain' Streptococcus hemolyticus. However, in view of the divergence of opinions, it seems wiser to suspend final judgment until the organism has received further study and to refer to it for the present as the 'typical strain.'

"The fact that in our experience 83 per cent of the streptococci isolated from the blood of patients with chronic infectious arthritis have fallen into one biologic group strongly supports the theory that a considerable proportion of all cases of chronic infectious arthritis are caused by a biologically specific strain of streptococcus. The comparatively small remainder of cases appears to be referable to either Streptococcus viridans or Streptococcus nonhemolyticus. It should not be forgotten that rarely a clinical syndrome indistinguishable from chronic deforming arthritis can be produced by the gonococcus.

"Our investigations into the bacteriology of the joints in chronic infectious arthritis have not been as extensive as the blood cultures, but the isolation of streptococci from a number of joints would indicate that the joint lesions in this disease are actual infections. The interesting theories propounded by Swift, and more recently by Zinsser, as to the allergic nature of the joint lesions in rheumatic fever, may or may not be applicable to chronic infectious arthritis. The latter disease appears to have its perfect analogue in gonococcal arthritis, an infectious disease in which a primary gonococcal focus of infection in the prostate or seminal vesicles produces lesions in the joints by metastatic infection through the blood stream.

"In the small series of joint cultures studied, the results were consistent with those obtained from blood cultures. The 'typical strain' of streptococcus was isolated from the joint in two cases, Streptococcus viridans in one case and nonhemolytic streptococcus in one. In two of the four cases with positive joint cultures, a streptococcus identical with the one isolated from the joint was also recovered from the blood.

"To our minds, one of the most significant features of this study has been the correlation of streptococci isolated from a focus of infection with streptococci recovered from the blood or from the joints

of the same patient. In several instances, the identity of these streptococci has been clearly proved by the similarity of their cultural and biologic reactions.

"Our studies on experimental arthritis in animals are still in the preliminary stage. Several interesting facts have already been brought out. It is comparatively easy to produce a chronic non-suppurative arthritis in rabbits with the 'typical strain' of streptococcus. In rabbits with experimental arthritis, the 'typical strains' can be recovered from the blood and from the infected joints. Finally, the histologic changes which take place in the joint of the rabbit with experimental arthritis are strikingly similar to those which occur in the joint of a patient with chronic infectious arthritis. When, in a patient with typical chronic infectious polyarthritis, a biologically specific strain of streptococcus has been isolated from the tonsils, from the blood stream, and from one of the infected joints, when this streptococcus isolated from the patient produces similar lesions in the joints of rabbits, and when the same organism is recovered from the blood stream and from the affected joints of the rabbit, it is hard to avoid the presumption that this streptococcus is the cause of the disease.

"A diphtheroid bacillus was recovered from the blood in four patients with chronic infectious arthritis, and in one of the four a diphtheroid was removed from an infected joint. This organism has been isolated by other bacteriologists from the blood and joints of arthritic patients. We are not disposed to attach much significance to its presence. Diphtheroids have been found so frequently in lymph glands of both healthy and diseased patients that their occasional presence in the blood or even in the joint would not be surprising.

"Micrococcus zymogenes was isolated from the blood of two patients with chronic infectious arthritis. We are not prepared to express an opinion as to the etiologic significance of this organism at the present time.

"A considerable number of the patients in this series have been treated with autogenous or stock streptococcus vaccines. In many cases the results have been encouraging; furthermore, in a number of instances, inoculations with vaccine appear to have sterilized the blood stream. Sufficient time, however, has not yet elapsed to permit of a final judgment as to the therapeutic value of vaccine.

"Perhaps a few suggestions should be offered to any who may undertake a study of the bacteriology of the blood and joints in chronic infectious arthritis. The following points are all essential for successful results:

"1. Select the proper type of patient. Patients with polyarthritis with swelling of several joints, preferably with one or more fusiform fingers, give the highest proportion of positive blood cultures.

"2. Take plenty of blood, from 20 to 30 c.c., for the blood culture.

"3. Take several blood cultures on each patient, preferably after the joints have had some exercise.

"4. A *ph* of 7.6 is the optimum for the blood cultures.

"5. The original cultures must be kept under observation in the incubator for at least four weeks, subcultures being taken every four or five days during this period. Before finally discarding the original broth flasks, some of the medium should be centrifugated and cultures and smears made from the sediment.

"If, as appears highly probable from this study, chronic infectious arthritis is usually a streptococcus infection, what shall be said of the etiology of hypertrophic or degenerative arthritis? For some time there has been a growing conviction among many students of arthritis that degenerative arthritis is not a truly inflammatory process and that it is non-infectious in nature. Such a conception of degenerative arthritis is supported by the results of this study. All the blood cultures taken from patients with degenerative arthritis were sterile. Unfortunately, no opportunity for taking joint cultures on these patients presented itself. At the present time all the evidence at hand points to the conclusion that degenerative arthritis is just one more phase of the somatic deterioration which we call old age.

"Some writers on arthritis have attempted to make a distinction between chronic infectious arthritis and arthritis deformans. The presence of streptococci in the blood and joints of both these clinical types would seem to indicate that there is no basis for such a distinction. Certainly, from our own studies, we are forced to conclude that arthritis deformans is nothing more than the end-results of chronic infectious arthritis. The 'deformans' type usually presents a history of long standing.

CONCLUSIONS

"1. A streptococcus can frequently be isolated from the circulating blood of patients with chronic infectious arthritis (61.5 per cent in this series of seventy-eight cases).

"2. Of these streptococci, 83.3 per cent are culturally and biologically identical, and appear to be

attenuated hemolytic streptococci. This dominant strain has been referred to as the 'typical strain.' The remaining strains fall definitely into either the viridans or the indifferent group of streptococci.

"3. A streptococcus, culturally and biologically identical with the strain isolated from the blood, can sometimes be cultviated from one of the affected joints in the same patient.

"4. A streptococcus, culturally and biologically identical with the strain isolated from the blood and joints, can sometimes be isolated from a focus of infection in the same patient.

"5. When the 'typical strain' of streptococcus is injected intravenously into rabbits, a majority of the rabbits develop a chronic non-suppurative polyarthritis. Microscopically, the histologic changes in the rabbit's joints are practically identical with those observed in the joints of patients with chronic infectious arthritis.

"6. Cultures from the blood and from the joints of rabbits infected with experimental arthritis frequently yield a streptococcus identical with the strain originally injected.

"These observations tend strongly to confirm the theory that chronic infectious arthritis is a streptococcal infection, caused in a large proportion of cases by a biologically specific strain of this organism. The presence of this specific strain of streptococcus in the blood of several patients with advanced arthritis deformans goes far to corroborate the view already widely held that arthritis deformans and chronic infectious arthritis are one and the same disease."

Influence of Nutrition

Eugene E. Marcovici, M.D., F.A.C.P. (*American Medicine*, November, 1928), writes a detailed criticism of the diet of the "average New Yorker." Breakfast, luncheon, and dinner are described in an interesting manner.

Under "Faulty Diet Forms and Their Sequels," the coarse diet, qualitatively reduced diet, diets with insufficient vitamins, reduced liquids, excess liquids, milk diet, spices, excess carbohydrates, proteins, fats, meats, etc., are dealt with as well as the results of such diets. Direct and indirect disturbances due to faulty diet are well discussed.

Hepatic Efficiency

William Ralston (*The British Medical Journal*, 3556: 395-396, March 2, 1929): A test of hepatic function based on the use of sodium salicylate was suggeste dby Roch and Schiff (Geneva) and somewhat modified by H. Thiers. Thiers had stated that "a normal adult can assimilate a dose of 0.04 gram (= 3/5 grain) of sodium salicylate, no trace of salicylic acid being found subsequently in the urine. If the liver is damaged, salicylic acid appears in the urine passed during the second to the seventh hour after the ingestion of the sodium salicylate."

Preliminary experiments with a selected patient and a healthy adult, made by the present author, in which H. Thier's method—namely, extraction of the urine in a flask and then testing the extract for salicylic acid with diluted ferric chloride—was closely followed, were contrary to the statement on which the test is based, salicylic acid being found in the urine of both the healthy adult and the patient with the damaged liver.

In later experiments, carried out with three more normal adults and three other patients with damaged livers, the method of extracting the salicylic acid was slightly changed in order to be sure that the extraction was complete and not blurred by the presence of bile pigments. The salicylic acid appeared in the urine of each of the three healthy adults after the ingestion of a small dose of sodium salicylate, as well as in that of the three patients with damaged livers. No distinction can be made by means of this test between the two groups of tested individuals. The author concludes that it can be of no use in classifying cases with damaged livers or in measuring the extent of the damage.—*International Medical Digest.*

Pneumo-radiography

H. Schilling describes Rosenstein's technique for pneumo-radiography of the kidneys as follows:

"The patient is placed in the kidney position. Just below the twelfth rib and at the outer edge of the lumbar muscles there is inserted an ordinary record-needle to the depth of 4–6 cm., according to the thickness of the covering in a direction posterior anteriorly, with a slight direction upwards and medially." The position of the twelfth rib may be determined by x-rays. The point of the needle should be in the fat-capsule. There should be no bleeding, nor should the needle make too large respiratory excursions. In the latter case the point of the needle is probably in the kidney.

Oxygen is injected by means of a 100-cm. syringe with an easy-running piston. Resistance should be trifling. From 400 to 600 c.c. of oxygen are injected, whereupon there appears a marked tym-

pansm in the lumbar region, and there should be no pain.

After the injection the patient is placed in the sitting position in order that the gas may rise around the upper end and the organs be photographed immediately afterward.

By turning the patient in front of the screen the kidney can be viewed from various sides. Its form, size and situation are distinctly visible. Pneumo-radiography entails little risks. Some few cases of temporary embolism have been reported.

Inflammatory renal conditions, pyonephrosis and tuberculosis constitute contraindications, as in these diseases there might be danger of perforation.

Cases in which this method may be employed to advantage include:

1. Renal tumors.
2. Where it is desired to ascertain the relation of the kidney to another tumor.
3. Kidney dystopia.
4. Stone appears more clearly than in an ordinary film or in pyelography.
5. Adhesions.
6. The suprarenal gland is often clearly shown.

Demonstrations of pneumo-radiograms in different conditions are given. — *International Clinics*, December, 1927.

Potassium Permanganate

John L. Chester (*Annals of Internal Medicine*, May, 1929) contributes an article under the caption, "Potassium Permanganate in the Treatment of Pneumonia." He follows the English workers, Nott and Roche, using a standard solution made by dissolving two grains of potassium permanganate to one and one-half pints of warm, sterile water.

The solution is given by bowel, using a funnel and catheter, with the patient lying on the left side. The average adult dose of the standard solution is four ounces, repeated every three hours.

He reports a series of 23 cases of lobar and bronchopneumonia treated by this method at Providence Hospital, Detroit, with 21 recoveries and two deaths—a mortality rate of approximately 9%.

He likewise reports a series of twenty cases treated at the Eloise Hospital (the Wayne County Hospital for the Poor). These cases were all complicated and nearly all were alcoholics. Ten were treated by the permanganate method and ten by other methods. Of the ten treated with permanganate, five recovered, showing a mortality rate of 50%. Of the ten treated without permanganate, all died.

The author sums up as follows: "The suggestion would be that potassium permanganate has all the earmarks of having a true specific action on the microörganisms of pneumonia. Apart from the English cases I can not find that a determined effort has been made to really test its efficiency. The very prevalence of an infection so virulent and intractible as this is should be sufficent to encourage widespread efforts to discover whether or not the hopes already engendered for the treatment are founded on good and sufficient premises."

TUBERCULOSIS ABSTRACTS

Physical Signs in Pulmonary Tuberculosis

Skill in interpreting physical signs of tuberculosis lesions in the lungs depends on an understanding of the underlying pathological mechanism. Examiners encounter many variations in different cases. Some of these are not easily explainable, but most of them should convey definite information if one is accustomed to construct in his mind a picture of pathological anatomy as he moves his stethoscope over the chest. The variations are best explained by tracing a lesion through the stages of its development and advancement to necrosis on one hand, and through its gradual healing on the other.

The Early Stage.—Most patients falling sick with pulmonary tuberculosis and presenting definite physical signs of its presence have a lesion occupying an area at least one or two centimeters in diameter. It is common knowledge that many have widely extensive lesions before they are aware of the presence of the disease, but for purposes of illustration the small lesion will be considered.

In its first stages, this lesion presents the appearance of an intact tuberculous nodule or of a small patch of tuberculous pneumonia. If it is situated deep within the lung or at some poorly accessible point beneath heavy bony or muscular structures, it may be impossible of detection by physical examination. But such instances are not common, and the great majority of lesions will declare themselves if the examiner is competent and painstaking. On percussion, no definite abnormality may be made out, and the only change in breath sounds may be a diminution in intensity due to decreased aëration of the diseased part. Indeed, slight deviations from the normal in the pulmonary resonance and in voice and breath sounds are so common in healthy persons that, alone, these changes are not of great diagnostic

value. But the presence of râles in addition, or even alone, is of the highest significance.

In the early stage, the amount of moisture associated with the tuberculous deposit is not much; consequently, the râles are fine, are confined to a small area, and sometimes one must listen sharply to make sure of them. Indeed, they may not be detectable unless auscultation is performed with the patient coughing and thus setting in motion the minimal secretion that gives rise to the *râle* (rattle).

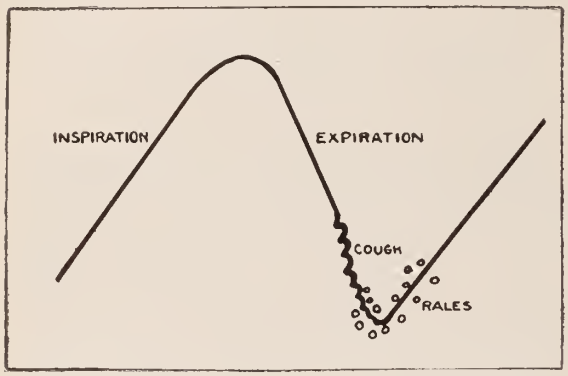


Diagram illustrating rales elicited by expiratory cough.

They persist and do not clear away as the patient coughs. This finding warrants the presumption of pulmonary disease, probably tuberculous, unless further investigation explains the abnormality on some other basis. A properly exposed x-ray film should show the lesion and corroborate the diagnosis. At this stage, the sputum often is negative for tubercle bacilli because the tuberculous deposit has not yet ulcerated and discharged its germ-laden contents into a bronchus.

Caseation and Necrosis.—As the lesion grows older and more active, it becomes more dense. Thus the percussion changes become more obvious, and more decided alterations in voice and breath sounds may be detected. As the same time, the center of the mass goes on to caseation and liquefaction necrosis. This means more moisture through which the air currents must pass; consequently, the râles are definitely more numerous and more moist. The liquefied areas empty their contents into bronchi, leaving multiple, tiny, honeycombed cavities, and, therefore, the râles become moderately coarse and sometimes bubbling, as distinguished from the fine crepitations of the earlier stage. About the periphery of the process, the râles may still be fine because necrosis may not have occurred there.

Excavation.—The small tuberculous deposit often excavates completely, leaving a hole one or two centimeters in diameter. The resulting cavity wall may be very thin, flaccid, and surrounded by almost normal lung tissue. Because of this peculiarity of structure, it does not constitute a good resonating chamber and, therefore, does not give rise to the changes in percussion note and breath and voice sounds so characteristic of the cavity surrounded by consolidation or by a stiff, fibrous wall. Often this fresh, thin-walled cavity produces râles of a suggestively bubbling or consonating quality. If one does not appreciate the significance of such râles, he will miss most cavities, because most of them do not produce the classical textbook signs. A few "cavities" are silent in that none of these signs can be elicited.

Healing.—Tuberculous deposits may heal by resolution or fibrosis; usually by a combination of the two. Cavities sometimes become shrunken or even obliterated by the contraction of surrounding connective tissue. Healing may thus advance to the point where the patient is entirely free of symptoms; if healing is so maintained, the disease will not relapse. Nevertheless, the patient usually bears definite scars permanently, and physical examination will reveal them. Permanent alterations in breath and voice sounds and in thoracic resonance depends on the extent, density and degree of contraction of the fibrosis. Most patients who have had active tuberculosis and recovered from it never entirely lose their râles, even though they may remain perfectly well symptomatically. The râles are usually small and not very moist, and may be detectable for years over the densest part of the old lesion.

The first examination of a patient may reveal tuberculosis in some stage of quiescence and healing. Physical signs may be of uncertain value in determining the need for treatment, and in these cases additional evidence must be gathered from present symptomatology, sputum and x-ray examination, and perhaps from a period of careful observation.

Little has been said about the gross changes in physical signs, these being self-evident as a rule. The location of the abnormal findings has a diagnostic bearing. Most often they are in the upper third of the chest. Apical râles have always been regarded of greatest significance, but often they are below the apex. In a considerable group of cases, the earliest sign is persistent fine râles in the upper third of the chest but below the level of the clavicle, and these should be taken just as seriously as apical râles. Tuberculosis at the base of the lung is not extremely rare, and adventitious basal signs should suggest this possibility when symptoms arouse suspicion.

Of all abnormal signs in pulmonary tuberculosis, the most important is râles. Yet they will be missed in most of the early cases unless the patient's chest is stripped for examination and *unless the examiner*, while he auscultates the chest, *instructs the patient to cough at the end of each expiration.*

In all instances in which the physical examination reveals definitely abnormal signs in the lungs, an x-ray photograph should be made to substantiate the diagnosis. In patients with suggestive symptoms and negative physical signs, a radiograph should also be made, remembering that some early lesions can be discovered only in this way. Only in persons who are free of symptoms suggestive of tuberculosis and whose chests are normal on careful physical examination is it reasonable to omit the radiograph.—*J. Burns Anderson, physician-in-chief of Loomis Sanatorium.*

Fowler's Position

It is an appalling fact that since 1905 there has been an increase of 31% in the mortality rate in cases of appendicitis.

A number of factors are responsible, some of which are: the work of the occasional operator, the increasing number of poorly equipped hospitals, unsatisfactory methods of transportation and the ignoring of the advantages accruing from the use of the elevated posture. In this article the last factor will be considered.

Many years ago Fowler called attention to the value of putting patients in that position which best facilitates drainage in the abdominal cavity downward to the pelvis. In this hospital every patient with an acute, inflammatory lesion of the abdomen is immediately placed in this position, and this position is maintained *en route* to the operating room, during operation, as the patient is returned to his bed, and during his post-operative course.

This procedure is also of great practical importance in general practice. As soon as the diagnosis is made of an acute, inflammatory, abdominal lesion, the patient should be put in Fowler's position, and, during transportation to the hospital, whether by train, ambulance or automobile, this position should be maintained as far as possible.

Clinically, it is our impression that overwhelming toxemia is the cause of death in those patients dying of peritonitis in this hospital. The most important constant finding at necropsy is collections of pus in Morrison's pouch, the dependent portions of the upper abdomen as well as in the pelvis.

We are firmly of the opinion that if the teachings of Fowler (as well as that of Murphy and Oschner) are meticulously followed in our cases of acut,e inflammatory, abdominal lesions, we can materially reduce this lamentable mortality rate.—*W. R. L.*

Hypotonia Bulbi

Arthur J. Patek, Milwaukee (*Journal A. M. A.*, Feb. 9, 1929), reports on five cases of soft eyeball (Hypotonia bulbi) in diabetic coma. He states that hypotonia bulbi is not found in comas other than those of diabetic origin. Constancy of the sign in diabetic coma is not conceded, but the assertion is made that it is present with striking frequency. It is absent in diabetic acidosis without coma. The hypotonia is most pronounced at the height of coma, and quickly recedes as the coma is overcome. The eyeball tension may not be lowered an equal degree in the two eyes. In the five cases seen by Patek the reduced tension of the eyeballs in diabetic coma proved itself of diagnostic value.

Concentrated Foods

Julian L. Rogatz, M.D. (*American Medicine*, November, 1928), makes a strong plea for the routine use of more concentrated formulæ in the feeding of infants. He points out the disadvantages of starting the infant off on the weaker or diluted formulæ, which have always been held in great regard. The use of concentrated formulæ is being more frequently used and is overcoming many of the difficult problems in infant feeding, although there is yet considerable hesitation among physicians in using this type of feeding. Concentrated feedings are based upon scientific study and observation and it seems advisable to use such formulæ.

A series of cases are recorded to substantiate this procedure. Interesting charts are given to show marked improvement in weight among infants fed upon the concentrated formulæ. High protein, fat or carbohydrate in the formulæ are not harmful and therefore point to the use of the more concentrated diets. Pyloric stenosis, accompanied by severe vomiting, is overcome by this form of feeding. Regurgitation is often controlled by adding a boiled cereal to the formulæ, and feedings with "the necessary equivalents concentrated into a minimum volume give better results than the more dilute formulæ." This is due to an enhanced peristaltic activity. The use of concentrated formulæ as a more general routine measure will obviate many of the difficult feeding problems.

THE WEST VIRGINIA MEDICAL JOURNAL

JAMES R. BLOSS, *Editor-in-Chief* - - - - - - - - - - Huntington

...ASSOCIATE EDITORS...

J. HOWARD ANDERSON, Marytown — WALTER E. VEST, Huntington — C. A. RAY, Charleston — HARRY M. HALL, Wheeling

THE JOURNAL issued on the first of each month. Entered as second-class matter January 1, 1926. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917. Authorized July 24, 1919.

Subscription to Members ..... $2.00 Per Year
Subscription to Non-Members ..... $3.50 Per Year
Single Copies ..... 50 Cents

OFFICERS

President:
H. M. HALL ..... Wheeling

First Vice-President:
B. F. BONE ..... Moundsville

Second Vice-President:
W. C. SWANN ..... Huntington

Third Vice-President:
J. A. DUFF ..... Martinsburg

Executive Secretary:
MR. JOE W. SAVAGE ..... Charleston

Treasurer:
T. MAXFIELD BARBER ..... Charleston

Delegates to A. M. A.:
JAMES R. BLOSS (1928-29) ..... Huntington
HENRI P. LINZ (1928) ..... Wheeling

Alternates:
A. A. SHAWKEY (1928-29) ..... Charleston
HARRY M. HALL (1928) ..... Wheeling

COUNCILLORS

Chairman of the Council for 1928:
R. H. DUNN ..... South Charleston

First District:
C. W. WADDELL (2-year term) ..... Fairmont
C. G. MORGAN (1-year term) ..... Moundsville

Second District:
C. H. MAXWELL (2-year term) ..... Morgantown
C. H. HALL (1-year term) ..... Elkins

Third District:
JOHN FOLK (2-year term) ..... Bridgeport
J. D. COLE (1-year term) ..... Clarksburg

Fourth District:
ROY BEN MILLER (2-year term) ..... Parkersburg
W. E. VEST (1-year term) ..... Huntington

Fifth District:
J. HOWARD ANDERSON (2-year term) ..... Marytown
H. G. STEELE (1-year term ..... Bluefield

Sixth District:
R. H. DUNN (2-year term) ..... South Charleston
H. A. WALKUP (1-year term) ..... Mt. Hope

¶ All original articles for THE JOURNAL must be made to it exclusively. Communications and items of general interest to the profession are invited from all parts of the state. Notices of deaths, removals from the state, changes of location, etc., are requested.

¶ Our readers are requested to send marked copies of local newspapers containing matters of interest to members of the medical profession. Name of sender should be given.

CONTRIBUTIONS TYPEWRITTEN

¶ Contract with present printer specifies all articles, communications, etc., MUST BE TYPED.

ADVERTISEMENTS

¶ Advertising forms will go to press not later than the tenth of each month. All advertisements must conform to the standard established by the Council of Pharmacy and Chemistry of the A. M. A.

WOMAN'S AUXILIARY

Mrs. R. V. Shanklin, Gary, President; Mrs. T. H. Harris, Parkersburg, vice-president; Mrs. W. C. Swann, Huntington, secretary; Mrs. W. D. Simmons, Slab Fork, treasurer.

Councillors

Mrs. C. G. Morgan, Moundsville, first district; Mrs. Ralph Maxwell, Morgantown, second district; Mrs. H. D. Price, Parkersburg, third district; Mrs. J. R. Bloss, Huntington, fourth district; Mrs. A. G. Rutherford, Welch, fifth district; Mrs. E. S. DePuy, Beckley, sixth district.

Delegates to Woman's Auxiliary of A. M. A.

Mrs. R. V. Shanklin, Gary; Mrs. B. S. Preston, Charleston. Alternates — Mrs. George Jeffers, Parkersburg; Mrs. W. B. Scherr, Morgantown.

STANDING COMMITTEES

Medical Defense Committee

C. G. Morgan, Moundsville, Chairman; H. A. Walkup, Mt. Hope; H. G. Steele, Bluefield.

Committee on Scientific Work

O. B. Biern, Huntington, chairman; G. H. Barksdale, Charleston; A. G. Rutherford, Welch.

Public Policy and Legislative Committee

R. A. Ireland, Charleston, chairman; R. H. Walker, Charleston; James McClung, Richwood; C. R. Ogden, Clarksburg, D. A. MacGregor, Wheeling.

Committee on Medical Education

John N. Simpson, Morgantown, chairman; W. T. Henshaw, Charleston; W. S. Fulton, Wheeling.

Committee on Professional Relations

John R. Shultz, Charleston, chairman, (5-year term); A. G. Rutherford, Welch, (2-year term); W. R. Goff, Parkersburg, (2-year term); Hugh G. Nicholson, Charleston, (3-year term); E. P. Smith, Fairmont, (4-year term)

Workman's Compensation Committee

W. A. MacMillan, Charleston, chairman; C. A. Ray, Charleston; John E. Cannaday, Charleston.

Committee on Public Health

David Littlejohn, Charleston, chairman; John Thames, Charleston; Will McLain, Wheeling.

Surgical Section

Robert King Buford, Charleston, chairman; B. I. Golden, Elkins.

Eye, Ear, Nose and Throat Section

I. D. Cole, Clarksburg, chairman; C. C. Jarvis, Clarksburg.

Hospital Association Officers

R. A. Ireland, Charleston, president; J. S. Turk, Wheeling, president-elect; B. I. Golden, Elkins, first vice-president; W. E. Vest, Huntington, second vice-president; Mr. Joe W. Savage, Charleston, secretary-treasurer.

PRESIDENT'S PAGE

"The worldly hope men set their hearts upon
Turns ashes—or it prospers, and anon,
Like snow upon the desert's dusty face,
Lighting a little hour or two, is gone."

It was but yesterday the doctor walked out of the house after delivering another citizen into the experiences of this mundane sphere, and, if perchance the oven had likewise given birth to some freshly baked cookies, helped himself to some and the family accepted it as a compliment. You can picture C. H. Maxwell doing it.

Today the invalid goes to a skyscraper of a hospital and has the exigencies of the body analyzed, judicially considered, and at last ratified into either a condition, disease, or complex.

To the casual observer there is as wide a difference from a personal standpoint between the old camaraderie and the new system which seems to echo going into a cold, marble-bestrewn bank for a loan as the mind could conceive. It is an illusion.

Comes the Cleveland Clinic disaster! One would be inclined to think it just another simple newspaper headline crowded in among "Three hundred die in a mine explosion," "Four hundred go down at sea," "Thousands die of famine in China." But it is no such thing. One discovers that the hearts of men are deeply concerned with their doctors, after all. Pity is rife that those that save should die. Deepest sympathy glows brightly with tearful concern that men and women who have set out to make life more tolerable for others should suffer such calamity. As in every other modern movement the kinship and mutual friendliness are not so much upon the sleeve, but there they are, just the same. Except in some instances, doctor and patient are in friendly relation and the much-vaunted commercial aspect is absent. George Crile saved lives by the thousands, and many a man, but for him, might just as well rest in France where the red, red poppies bloom.

John Phillips, in Moundsville the night before, but, despite the invitation to remain, must needs motor back in the darkness, to take his place on the morrow in the world's work of curing the sick. He, too, numbered his loyal clientele by the hundreds. Death claimed him because he would serve amidst the deadly fumes.

Dr. Fulton, some years back, a capable surgeon with so much to his credit in alleviating the maimed and the halting, lost his only son, on whom his heart was set—and, as if this was not enough, later a promising daughter, by unforeseen disaster.

It all makes for anachronism. The public itself is confused. One hears on every hand the question, "Why were these servants of mankind scourged with the heavy hand of adversity?" Some are solaced with the answer, "It was to be." We believe no such thing, for if we did, then such a monster is fate as to make of life a hideous thing. Natural law is omnipotent, and if a church overflowing with good works gets into the path of a tornado or volcano it will suffer as will the hovel of the thief.

Yet through it all—the wherefore and the why—comes the thought that out of the muddy slime the lilies grow. For some reason the big lessons of life which draw the attention of the multitude to the better things that are theirs or may be theirs come only at a high cost in sacrifice from those very people who have the least reason for giving up their heritage. Why should George Crile or John Phillips or William Fulton, deep in the work of saving life, be called upon to further offer the sacrificial offering of resignation in personal loss of those they hold most dear, in order to bring the heedless to a magnificent realization? We do not know nor do you, except that the legend goes that God gave his only Son and Abraham was to offer Isaac.

People become listless and unresponsive to the work of the medical profession, and it is only through the suffering of some eminent doctor that they are called to realization. It may be to suggest immortality, too. Those that do so much for humanity never seem to reap their just rewards here. It comes over us that inasmuch as no atom is lost, neither is the well-done work a matter of oblivion. The spectacle of the hero in No Man's Land, or that of John Phillips returning to the place of certain death, represents something that is deathless to us. If the Power that put us here allows all that to dissipate into nothingness, considering the minute attention given to the infinitesimal amœba, then indeed is the universe an inconsequential ball of matter and life itself a cruel mockery.

Harry M. Hall

EDITORIAL

Said in Passing

The Pulitzer jury to award the prize for the year's best novel was in session recently. The final award was to *Scarlet Sister Mary*. But it is stated that was not really their first choice, which was *Victim and Victor*, by Dr. John Rathbone Oliver of Johns Hopkins University. This man of many parts is head of the well-known Institute of Legal Medicine, which he attends in the morning. In the afternoons he has office hours, and, as one of the country's leading psychiatrists, consults with an array of patients. In the evening he is warden of the alumnæ hall and is there accepted as a great doctor of philosophy. On Saturdays at two o'clock he becomes a leading priest of the High Church Episcopalian, and is known as Father Oliver of Mt. Calvary Church. Yet he is author of the year's most important novel.

> *"Life may be given in many ways,*
> *And loyalty to truth be sealed*
> *As bravely in the closet as the field,*
> *So generous is Fate."*

Here and there is still to be found a doctor who knows nothing but his medical grind. It is all he can talk about. He has no other aim or end. Inveigled to the golf course, he must needs be called away—always. The public no longer expects it, believing he will be a better doctor if his mind gets a little ventilation by recreation or pursuance of a hobby. Dr. John R. Oliver is not alone in his versatility. Dr. Webb, of Wheeling, has wonderful flower gardens and has dahlias and peonies that are widely known. Dr. Jeffers, of Parkersburg, and Dr. Cannaday, of Charleston, have rose gardens that well repay a trip to see and which are the pride of the owners. Dr. Ray, of Charleston, has a farm on which cattle roam that are a delight to the eye. Dr. Hoge, of Bluefield, takes a keen interest in Chinese vases and oriental rugs. Dr. Thornton, of Wheeling, is a great lover of music. We could go on and on, but these will serve to show how best to avoid the cardiovascular disease that is our greatest enemy.

Boy Scouts

Those members of the association who attended the Martinsburg meeting in May will remember that two Boy Scouts were constantly on duty during the convention at the door of the Central Theatre, where sessions were held. These boys were dismissed from school for the purpose of waiting attendance upon the doctors present, and their services, at times, were almost indispensable. As an aftermath, we find the following comment in one of the Martinsburg newspapers:

"A pleasing little aftermath of the state convention of West Virginia doctors here last week was noted by Judge D. H. Rodgers in depositing Monday morning a $5 bill to the account of Martinsburg Boy Scout general council. Two young scouts of Troop No. 5, LeGarde Thompson, scoutmaster, were on hand continuously during the convention, running errands, tending doors, passing out programs, and what-not. The scouts, true to their oath, refused to accept any tips for the work, so the State Medical Association mailed them a check for $5. The money goes into the general fund."

Old Crockwell

Henry Ford, in a recent newspaper article, has taken the medical profession to task for its failure to advertise. Mr. Ford scoffs at the objection to advertising and presents an advertising program for the profession which is theoretically sublime and practically stupid. In view of Mr. Ford's voluntary advice, the JOURNAL quotes herewith a doctor's advertisement that appeared in the August 3, 1861, issue of the *Sioux City Times*. It will give some idea of the situation as it exsited before the medical profession came to an ethical agreement on the advertising problem. The *Sioux City Times* gleaning follows:

OLD CROCKWELL
BETTER KNOWN AS
OLD DOC. CROCKWELL OF CROCKWELL FARM
NOW
J. D. M. CROCKWELL, M.D.
Member of the Iowa State Medical and Chirurgical Society,

wants to say to the public that he has withdrawn from Town Lot Speculations, and removed to his old farm, at Woodbury City (formerly known as Sergeant's Bluffs), Iowa, where he may be found; and in the future he will give his mind to the Practice of Medicine, Dentistry, etc., devoting especial attention to all chronic complaints; pledging himself to

CURE CANCERS

without the use of the knife or caustic potassia; and to ameliorate, if not cure, all cases of ophthalmia, rheumatism, liver complaint, laggard consumption, or phthisic in first stages, bronchitis, etc.

The Dr., though a graduate of two medical colleges, pledges his honor to treat his patients without the use of those poisonous remedies used either by the Allopathic or Eclectic School.

AND TO THE LADIES

He would say, if they are troubled with a spinal affliction, or Female Weakness of any kind, suffer no more, Relief can be had; and be assured that all matters of confidence will be held as sacred as life itself. And further, he would refer to the ladies of Woodbury and Dakota City, who he has had the honor to serve, and pleasure to relieve.

When in Sioux City, he will take pleasure in visiting any that desire to consult him as a Physician.

N. B. In all cases the charges will be low; the poor, if they wish, can receive advice *gratis*; and those desiring regular attention, to save expense, can obtain board near his residence for $2.50 per week in advance.

NOTICE TO THE SICK

Although I prefer to attend to chronic diseases, I will accommodate my friends by giving attention to all cases in the line of a Physician, Surgeon and Accoucheur. And then, to make a dime, I will perform all operations in Dentistry—extracting, filling (with gold or silver), and inserting on Pivot, gold or silver plate, from one to an entire set—I have a large stock of Teeth Material, etc., on hand.

J. D. M. CROCKWELL, M.D.

Dr. Schmidt's Ouster

The recent expulsion of Dr. Louis E. Schmidt by the Chicago Medical Society and the Illinois State Medical Association has brought forth considerable editorial comment from the lay press. The following appeared in the May 23 issue of the *Chicago Daily Journal*, and goes right into the heart of the great problem of ethics:

"In upholding the expulsion of Dr. Louis E. Schmidt by the Chicago Medical Society, the Illinois State Medical Society made it plain that the proceedings against the doctor were instituted solely because of a breach of medical ethics and not because of any economic question concerned. In Dr. Schmidt's case, the question of smaller fees and of free treatment naturally became involved because of the clinic maintained by the Illinois Social Hygiene League, of which he is president. In the public mind, the mistaken conviction has grown that Dr. Schmidt was being disciplined, even persecuted, because he offered medical treatment at a nominal fee.

"It has been a tradition with the organized medical profession that doctors must not enter into competitive advertising. Steps to prevent cutthroat competition have been taken to protect not only the medical profession but the public as well. It is convincingly clear that the most skillful advertiser is not necessarily the best doctor, and that the busy medical commercial combine, with advertising manager and press agent, is not likely to make up in mass production what it might lack in care and thoroughness. Yet the power of advertising is such that the clever medical salesman might exploit the public to its own detriment.

"Despite a sincere sympathy with the aims of Dr. Schmidt, whose competency has in no wise been challenged by the action of the two medical societies which have banned him from membership, the public must realize the importance of a stern code of ethics as applied to the practice of medicine. Only by the application of such a code has the public been protected from quacks and charlatans who would enrich themselves on human gullibility. Only by uplifting the medical profession and keeping it on the high plane it has occupied for generations have the great modern advances in scientific medicine been made possible. Dr. Schmidt's offense seems trivial, indeed, to the lay mind, but in reality it challenges the authority of the medical profession to govern its own affairs.

"Dr. Schmidt has announced that he will carry his case to the American Medical Association, which meets at Portland, Ore., next month. Insisting that a limited amount of advertising is proper and ethical in offering the services of clinics and charitable hospitals to the poor, he will present what he considers a progressive, not a revolutionary, ethical code for the consideration of medical authorities from all over the land. If he secures vindication at the hands of the supreme court of his profession and the decisions of the lower courts are reversed, his friends in Chicago will rejoice to see him reinstated. But lay opinion must, in any event, concede to the physicians the right and the good sense to run their profession so that the interests of humanity, to which their lives are devoted, will be best served."

Higher Criticism

In a recent book on the "Higher Criticism" of the scriptures appears this paragraph:

"While engaged in the study of skin diseases, on which he was perhaps the most prominent authority in France, Jean Astruc, consulting physician to Louis XV, was led to consider the Old Testament

laws of the clean and the unclean. Bringing to the search of the Hebrew scriptures a mind thoroughly trained in the methods of science, he began making a series of independent investigations. After some hesitation and timidity characteristic of such a man, this distinguished doctor of medicine published anonymously his findings in a little duodecimo volume entitled *Conjectures on the Original Memoirs Which It Appears That Moses Employed to Compose the Book of Genesis.* You may not know it, but this book separated into two divisions of criticism the classification of Elohim and Yahweh and has had as profound an effect on Biblical study as the discovery of microörganisms ever did upon the practice of medicine."

COMMUNICATIONS

A Letter to Mr. Ford

MR. HENRY FORD,
Ford Motor Company,
Detroit, Mich.

Dear Mr. Ford:

I have noted with interest your recent contribution to American journalism, wherein you give the lay public the "low-down" on the medical profession, particularly in regard to medical advertising. You have pointed out to the profession its false position on the question of advertising, and you have taken the profession to task, in no uncertain terms, for not relishing the flare for paid publicity. You say, of course, that the doctors are in the wrong.

Now, Mr. Ford, if I am correctly informed, you are not a doctor yourself and you do not hold the degree of doctor of medicine. As a consequence you will probably be interested to know that the writer is neither an automobile manufacturer nor an automobile mechanic. Therefore, I want to take up a few little matters with you while they are still fresh on my mind.

In the first place, let us consider your product, Ford Tudor sedan No. 385,406, which was sold me last year in West Virginia. What about that right rear brake? That's the one that locked on me one Sunday afternoon on the Boston Post Road, when it took 19 state police officers to untangle the traffic jam that resulted. It seems to me that your system of manufacturing is entirely wrong, and I would like to recommend an immediate change that will revolutionize your brake installation department. My recommendation is that you place your fan-belt department in charge of brake installation. I have never had any trouble with my fan belt, and it stands to reason if this department can successfully install fan belts, they can take care of your brake troubles.

Another thing: It has been called to my attention that your Ford doorhandle bolt No. LH4-161B is being inserted by a man who is not a naturalized American citizen. That's bad. I would suggest that you discharge all of your employees at once who are not American citizens, or else explain your attitude to your public.

One thing more, and then I am through: I understand that you have made no effort whatsoever for organized singing among your employees. For shame! Make your men sing, Mr. Ford, and your shops will not be the same again.

I am just passing these suggestions along to you for whatever they are worth, and hope you will not mind my meddling into your affairs.

Sincerely,

M. D.

ANNOUNCEMENTS

Pharmacopœial Convention

The eleventh decennial convention of the United States Pharmacopœial Association will meet in Washington, D. C., on May 13, 1930, according to a recent announcement of Dr. Reid Hunt, president, of Boston.

American Heart Association

It has been announced that the annual scientific session of the American Heart Association, Inc., will meet at 2 o'clock P.M. on July 9, 1929, in the auditorium of the Portland Woman's Club, 448 Taylor Street, Portland, Oregon.

State Board Examinations

Medical examinations for those who desire license to practice medicine in West Virginia will be held in Martinsburg, July 9–10, it has been announced by Dr. W. T. Henshaw, state health commissioner.

The Public Health Council, the licensing board of the state, will also interview all doctors who desire license through reciprocity.

Sedwick Medal Award

The American Public Health Association announces that the first award of the Sedgwick Memorial Medal will be considered in 1929. This award was established in honor of the late Professor

William Thompson Sedgwick, a former president of the American Public Health Association. The fund which provides the medal was raised by popular subscription from Professor Sedgwick's former students and friends. It is to be awarded for distinguished service in public health.

Samuel D. Gross Prize

It has recently been announced that essays will be received in competition for the fiften-hundred-dollar Samuel D. Gross prize until January 1, 1930. This prize is awarded every five years to the writer of the best original essay, not exceeding one hundred and fifty printed pages in length, illustrative of some subject in surgical pathology or surgical practice, founded upon original investigations. The candidates for the prize must be American citizens.

The essays must be written by a single author in the English language and should be sent to the "Trustees of the Samuel D. Gross Prize of the Philadelphia Academy of Surgery, care of the College of Physicians, 19 S. 22d St., Philadelphia, Pa." Each essay must be typewritten, distinguished by a motto, and accompanied by a sealed envelope bearing the same motto, and containing the name and address of the author.

Mrs. Stone to Leave

Mrs. Greta Payne Stone, who has been connected with the office of the executive secretary of the West Virginia State Medical Association for the past three years, is giving up her position on July 15. Mrs. Stone has been a most valuable worker for the Association and is well known to the profession throughout the state. Her successor has not yet been selected.

Hoffmann-La Roche, Inc.

The Hoffmann-La Roche Chemical Works has recently moved from its old location at 19-21 Cliff street, New York City, into its new plant at Nutley, New Jersey. The name has also been shortened to Hoffmann-La Roche, Inc.

State Meetings

The sixty-third annual meeting of the State Medical Association of Texas was held at Brownsville on May 21-23, 1929.

The one hundred thirty-seventh annual meeting of the Connecticut State Medical Society was held at Waterbury on May 22-23, 1929.

The twenty-seventh annual meeting of the Wyoming State Medical Society was held at Casper on June 24-25, 1929.

The thirty-fifth annual meeting of the Utah State Medical Association will be held at Salt Lake City on July 1-3, 1929.

COUNTY SOCIETY NEWS

Fayette County

The Fayette County Medical Society met at the Woman's Club building, Montgomery, W. Va., on Tuesday night, June 4, at eight o'clock. After a brief business meeting, Dr. T. G. Reed, of Elkridge, read a paper on "Traumatic Shock," advocating certain improvements in industrial medicine which, if carried out, would be of remarkable benefit to the laity. Dr. William R. Laird, of the Montgomery Clinic, read a paper on "The Rupture of Gastric and Duodenal Ulcers." Several case reports by Dr. Ralph Hogshead of Carbondale, Dr. Souleyret of Gamoca, Dr. H. A. Walkup of Mt. Hope, and Dr. A. L. Morris of Ansted, were presented.

The Fayette County Medical Society met at the Hill Hotel, Oak Hill, Tuesday evening, June 18. Twenty doctors, a total of 27% of the membership, were present. The state meeting at Martinsburg and the Central Tri-State meeting at Portsmouth, Ohio, were discussed. Delegates to the convention were Dr. Ben F. Brugh, Montgomery; Dr. C. W. Stallard, Montgomery; Dr. H. A. Walkup, Mount Hope, with Dr. Claude Frazer, Powellton, and Dr. L. G. Houser, Beckley, as alternates. The scientific program consisted of a paper by Dr. G. G. Hodges, of Kilsythe, on "Celiac Disease." Dr. C. W. Stallard, of the orthopedic department, Montgomery Clinic, read a paper on "Colles Fracture." Several case reports were made extemporaneously by Dr. H. A. Walkup, Mount Hope; Dr. Robt. P. Woods, Oak Hill, and Dr. J. F. Van Pelt, Oak Hill.

Ohio County

Dr. Howard T. Phillips, of Wheeling, was elected president of the Ohio County Medical Society at its regular meeting held on the evening of May 31. Dr. J. O. Rankin was elected vice-president, Dr. H. W. Bond, secretary, and Dr. R. J. Armbrecht, treasurer. The new board of censors of the society is composed of Dr. E. S. Bippus, Dr. J. R. Caldwell, and Dr. C. H. Clovis, all of Wheeling.

Dr. W. M. Sheppe, of the Wheeling Clinic, Wheeling, W. Va., was elected president of the Ohio Society of Laboratory and Clinical Diagnosis at the recent meeting of that organization held in Columbus. Dr. Sheppe succeeds Dr. J. W. Scott, dean of the medical college of Ohio State University.

H. W. BOND, Secretary.

Barbour-Randolph-Tucker

The Barbour-Randolph-Tucker County Medical Society met at the Hotel Irvine at Philippi at 6:30 o'clock on the evening of May 15, 1929. An excellent supper was served, after which the usual business was taken up, the meeting being presided over by Dr. C. B. Williams, of Philippi, president.

An invitation from the Elkins Business Men's Association, asking for the 1930 meeting of the West Virginia State Medical Association to meet in Elkins, was read and the delegates to the Martinsburg meeting were directed to present the invitation and use their best efforts to secure the meeting. The secretary was directed to send the letter of invitation to the state secretary.

The society being informed that probably neither the delegate nor the alternate was likely to attend the state meeting, Drs. B. I. Golden, of Elkins, and Dr. C. B. Williams, of Philippi, were elected as additional alternates.

Dr. E. R. McIntosh read a concise and well-prepared paper on "Vitreus Opacitus," and the causes, treatment, etc. Several members made inquiries as to the nature and means of treating.

Dr. W. Scott Smith presented a well-prepared and most excellent paper on "Prenatal Care." This paper was discussed by several members, the concensus of opinion being that it was largely a matter of educating the public and that this was a matter that devolved upon the medical practitioner.

J. C. IRONS, Secretary.

Marion County

The regular meeting of the Marion County Medical Society was held in Fairmont on the evening of May 28, 1929. Dr. L. D. Howard gave a very complete and interesting account of the state meeting at Martinsburg, and Dr. A. H. Stevens made a splendid report on the meeting of the American College of Physicians, held in Boston.

Cook Hospital held a reunion and celebration of their Founder's Day. Dr. E. W. Howard and Dr. Dorsey Fitch were the guests of honor, having been on the staff of the hospital since it was founded by Cook. A banquet and dance were held at the Doctors and Dentists Club. Dr. J. B. Clinton, chief of staff, was in charge of affairs.

It was decided by the society that the regular meetings of June, July and August be dispensed with, and the next regular meeting will be held in September.

PHILIP JOHNSON, Secretary.

Raleigh County

Dr. James Craig Small, of Philadelphia, addressed the members of the Raleigh County Medical Society at Beckley on the evening of May 17, on the subject, "The Etiology and Treatment of Rheumatic Diseases." This lecture was illustrated with lantern slides. Preceding the scientific program, a banquet was held with approximately fifty members of the society present.

IRA FISHER, Secretary.

Greenbrier Valley

The Greenbrier Valley Medical Society met at Ronceverte on the evening of May 14, at the Greenbrier Valley Hospital. Those present were: Drs. J. G. Leach, C. F. Mahood, D. G. Preston, C. E. Coleman, J. E. Hamner, H. D. Gunning, H. L. Goodman, H. L. Kirkpatrick, T. L. Gilchrist, A. D. Ferrell, J. E. Compton, and Dr. Clothier.

J. G. LEACH, Secretary.

Monongalia County

The regular monthly meeting of the Monongalia County Medical Society was held in the junior high school library at Morgantown at 8:30 o'clock on the evening of June 4, 1929. The scientific program was opened by Dr. B. C. John with a paper on "Spontaneous Rupture of Vitelline Vein in Utero."

Three other most excellent scientific papers were presented: by Dr. D. M. Post on "Retention Cyst," by Dr. W. H. Howell on "Gelatinous Carcinoma in Young Boys," and by Dr. B. M. Stout on "Rupture Acute Pancreatis." All four of these scientific papers showed the result of much thought and study, and were discussed by the members present.

The meeting closed with a report on the state meeting at Martinsburg by the delegates who were in attendance.

G. R. MAXWELL, Secretary.

PUBLIC HEALTH

Typhoid Preventive

Protection against typhoid fever has been placed within the reach of every citizen of West Virginia with the announcement of Dr. W. H. Henshaw, state health commissioner, that free anti-typhoid vaccine will be furnished by the State Health Department to the city and local health officers for distribution to all physicians who will administer it to persons desirous of securing it for themselves and their families. This is the first time this preventive measure has been offered free, and it is expected that the response will be even greater than that following the announcement that free toxin-antitoxin would be furnished for the immunization of persons against diphtheria. Dr. Henshaw said that since the first of February the State Health Department has sent to physicians, on request, enough toxin-antitoxin to protect 45,000 people.

The typhoid vaccine will be made at the new state hygienic laboratory, a division of the State Health Department, under the latest scientific methods. It will be shipped from the laboratory direct to the doctors requesting it, all requests being sent through the local health officers.

Types of Ventilation

A report of considerable interest, relating to respiratory illnesses and types of ventilation in schools, has recently been made public by Surgeon General H. S. Cumming, of the Public Health Service. In this study a comparison is drawn between two groups of schools, one group ventilated by mechanical means and the other by the natural open-window method. The groups are very nearly equal in size, the mechanically ventilated group having 1,573 pupils and the window-ventilated group 1,546 pupils. The two groups are highly comparable in composition, the first having 17.5 per cent of pupils of American parentage and the second 15.0 per cent of such pupils; the average age of pupils of the first group is 7.9 years and the second 8.6 years. The sex distribution of pupils is practically the same in both groups of schools. The weighted mean temperature of the rooms of the schools throughout the course of the study was found to be very nearly the same for both groups, being 67.8° for the mechanically ventilated group and 68.1° for the naturally ventilated group.

The total respiratory illness absenteeism findings of the study show the rate for such absences in the mechanically ventilated group to be 3.0 per cent of pupil sessions and for the naturally ventilated group to be 1.8. If, instead of total respiratory illness, we use independently collected data concerning only those illnesses causing an absence of three days or more, the study disclosed a respiratory illness rate of 3.3 per cent of pupil sessions in the mechanically ventilated group of such schools, as compared with 1.2 per cent for the naturally ventilated group. It is important to note that the respiratory illness absences of a duration of three days or more in the mechanically ventilated group of schools was in excess of that found in the naturally ventilated group in all cases, and that the same was true for respiratory illness absenteeism for a duration of one-half day and more, with but one exception. In this case the mechanically ventilated school had a rate of 4.4, while the window-ventilated had a rate of 4.7 per cent. It might well be pointed out that the actual numbers of absences of a duration of three days or more amounted to 359 in the mechanically ventilated group as compared with 133 in the window-ventilated group. From these data it appears reasonable to conclude that the atmospheric conditions produced by the systems of mechanical ventilation in use at the time of the study were associated with higher respiratory illness absence rates. These studies, however, should certainly not be interpreted as condemning all mechanical systems of air conditioning.

FROM OTHER JOURNALS

Malpractice and the Press

A newspaper exists only because it furnishes news. As every one knows, the unusual is always news, and thus do we see, from time to time, bold headlines announcing that "Patient Sues Local Physician for $50,000." Sub-heads and the story elaborate on the charges of the patient which have just been filed in the local court. Of course, the answer of the physician will not be filed for many days and the case may not be tried for months, so the newspaper really presents but one side of the case, but still it is, of course, news.

No one can justly blame a newspaper for printing news, but we sometimes wonder if the press really appreciates what it means in this specific instance. Skill, instruments and education are not a physician's capital; they are only the means of earning that capital which is really his reputation for care and a reasonable degree of success. The physician guards

his reputation jealously in the operating room, where he demands aseptic conditions, competent assistants, sponge and hemostat counts, and like precautions. He guards it in his every case by the care and attention that he gives. All this may be lost, however, at one stroke, if a patient enters a suit for malpractice and the press publishes the allegations of the patient for the community to read.

The physician has not been convicted. Indeed, the malpractice case may be thrown out of court in its first half hour, as has frequently occurred. But the confidence of the public and his patients may be forever shaken, if not lost. Even a case undertaken for the sake of charity may cost the physician an untold price.

If even fifty per cent of the malpractice cases were won, possibly we would have no grounds for this editorial. But when the figures indicate that only a very few cases have basis in fact and that the majority are based upon discontent, malice, misinformation, or even the effort of the unscrupulous to prevent recovery of an amount due, the situation is much changed.

We wonder if there is not time enough for blasting a physician's reputation when malpractice has been proved? Is this not a subject that the officers of county medical societies might discuss with local editors to a joint advantage and a better understanding? We think it is. — *Wisconsin Medical Journal.*

Economic Loss From Illness

The business angle of a matter of highest medical importance was presented recently by Irving Fisher, professor of economics in Yale University, in a copyrighted article published in the St. Louis *Post-Dispatch.* Prof. Fisher dealt with the dollars and cents loss of illness among industrial workers, with particular reference to last winter's wave of influenza. The subject, that of preventing illness in industry, is one to which has been devoted not merely the utmost interest but the utmost efforts of the medical profession. The economist's side of it, therefore, is a familiar problem treated from a refreshingly different viewpoint, and some of his conclusions merit our consideration.

Professor Fisher mentioned a corporation whose common stock earnings had shrunk to one-third or one-half normal because one-fourth its force was suffering from respiratory infections. Illness in the United States, he related, was estimated by Dr. Homer Folks to cost $15,000,000,000 a year. The Public Health Service had found that colds and bronchitis caused 419 annual cases of sickness per 1,000 population, and influenza and grippe were second with 143 per 1,000. He pointed out that "more than half the population, therefore, have respiratory ailments every year with losses of hundreds of millions not only to employers but to the families of the whole population in decreased efficiency and production and in extra expenditures for illness." He cited that Dr. Volney S. Cheney, medical director of Armour and Company, found that 45 per cent of absences in most of the large industries was caused by colds or the more serious respiratory diseases.

The National Industrial Conference Board, Dr. Fisher wrote, found, in an analysis of 4,600 plants employing 2,500,000 persons, that most of the large establishments employ full-time physicians, while many of the smaller ones have at least a trained nurse under the occasional supervision of a local physician. He said that the board had suggested establishing single, well-equipped medical units for groups of small plants conveniently located, with the cost divided between them. The average cost of industrial medical attention was $5.14 a worker as reported in 1924 by 447 concerns, and in no case did it rise to $5 per $1,000 pay roll, or one-half of one per cent.

"Prevention of sickness," he concluded, "is the common meeting ground of employers and employees, where their interests are identical. For every day of health gained, the men and their families gain the wages they formerly forfeited during sickness, besides the expenses for the doctor, for operations, special diets and nursing which cut into their allowances.

"On the side of the employer experience shows that for every dollar he expends on a modern system of industrial sickness prevention he saves many dollars formerly lost in reduced production, rapid turnover of labor, and costly interruptions and retardations of business.—*Missouri Medical Journal.*

Indelible Pencil Poisoning

Poisoning from material used in the manufacture of indelible pencils has been frequently reported in medical literature, and Dr. Morris Fishbein sounds a warning to the public through the *Scientific American.* He believes that a real danger exists from this form of poisoning, and cites several instances in which portions of indelible pencils have been forced into the human body, accidentally or otherwise, with

resulting serious symptoms. In one case severe intestinal symptoms with jaundice were produced This was followed by swelling of the hands and pain and renal symptoms. He states that surgical removal of the portions of the pencil was followed by relief of symptoms. He also states that portions of the pencil have caused serious eye inflammation followed by secondary infcetion, and suggests that precaution be taken to prevent shavings of the pencils, when they are being sharpened, from getting into the eye.—*International Medical Digest.*

GENERAL NEWS

Convention Attendance

The Eastern Panhandle Medical Society, the host society for the Martinsburg convention, led the field in the number of registered members in attendance. There were 25 members of the Eastern Panhandle society who attended and took part in the sixty-second annual meeting. Kanawha County, with 21 members in attendance, had a larger registration than any other visiting society.

There were three visiting societies who tied for second place in the registration, each having fourteen members in attendance at the meeting. These were the Marion County Medical Society, the Academy of Medicine of Parkersburg, and the Ohio County Medical Society. The Cabell County Medical Society had 13 members in attendance, the Monongalia County Medical Society 11 members, and the Grant-Hardy-Hampshire-Mineral and the Harrison County medical societies had 10 members each. There were 36 visitors in attendance.

Dr. Webb Wins Prizes

Dr. W. S. Webb, of Warwood, a member of the Ohio County Medical Society, recently came into the public eye as an amateur flower enthusiast when he captured 20 out of 32 prizes in the first annual peony show at the Oglebay Park clubhouse, Wheeling. Dr. Webb is quite well known as an amateur gardener and maintains gardens both at his home and on the Ebenezer farm in Ohio county. He has recently been asked to assist in the landscaping of Warwood Park.

Midwives Licensed

License to practice midwifery in West Virginia has been granted to 296 persons this year by the state health department. These licenses were issued only on the recommendation of a local physician, for the period of one year. The large majority of applicants were from rural areas where medical service is hard to obtain.

That the practice of midwifery is on the wane in West Virginia is shown by the decrease in number of applicants. This year license was issued to 296 applicants as against 521 in 1927. This is attributed to several facts, among which are good roads, making medical service more easily obtained, an increasing number of families employing physicians, the midwife being employed only in the capacity of a nurse, and more general knowledge of the principles of health.

Seasonal Medicine

Years ago the medical societies slumbered between meetings and went into complete hibernation during the long vacation of the late spring, summer, and early fall. Some still do.

Years ago the Medical Society of the County of Kings enjoyed a period of relative lethargy from the end of May to the first of October. The library saved the organization from complete somnolence. Then came a change. Practice did not stop. Germs, accidents and the other causative factors of medical activity take "vacations" of a sort but the end result requiring action by the medical professional has a "seasonal" swing that is well recognized. Nevertheless, it is often overlooked until upon us. For instance:

The need for the medical profession and the public to have its technique for resuscitation always in good form is not seasonal; gas and electric accidents may be greater in the colder and darker months, but drownings increase during the vacation months of warmer weather and longer days.

With the out-of-doors season the increase in automobile and other casualties, ivy poisoning, pollen reactions and other seasonal conditions are well known. The prevalence of ringworm of the feet in the bathing season is not so obvious. It is said to be increasingly a summer seasonal affair.

Dermatophytosis is more prevalent during the period of frequent use of the public bath pavilion, the club shower room, etc. Transportation of the fungus of ring-worm during this time of the year to our own bathrooms from the public place is an ever-present possibility. Poison ivy, eczema and other conditions must be differentiated. Treatment must be continued for a considerable period with close attention to prevention of spread of the infection.

Then again in a metropolitan area such as Brooklyn there are other seasonal medical opportunities dependent upon the opening of school in the fall. Remediable defects may be scheduled for attention during the vacation period. Examination of the school population by the private practitioner, if done during the summer months, avoids a rush of work during the early weeks of September. Vaccination against smallpox before entering school, and immunization against diphtheria during the vacation season, should give the maximum of protection on the basis of the expected upcurve of these diseases in the late fall and winter months.

Of course, typhoid and other diseases and conditions come to the mind of the medical man. Some one recently said that the practitioner of the future would make his living from preventive medicine more and more and less and less from curative work. This is a poor way to express the change that is taking place. As our knowledge of prevention grows our need for more astute clinical medicine increases. We can not clean cut the division between curative and preventive practice. We can visualize an increasing volume of work for the wide-awake practitioner who practices preclinical medicine, who gives serious attention to the hygiene and regimen of his clientele, and who does not *pooh-pooh* the ambition of his not-sick patient who aims to remain that way.

For summer reading, let us suggest the "literature" put out by the health promoters—good, bad, and in-between. Some of it will produce a laugh—some will provide suggestions for the good of the patient and his medical advisor, and some of it will deserve the comment—*bunk!*

All of it is read by the general public to the advantage or otherwise of the individual and the community.—*Bulletin, Medical Society of the County of Kings.*

Tuberculosis Cures

Drug cures for tuberculosis have become a rarity in the interstate commerce of medicinal preparations, according to the Food, Drug and Insecticide Administration, Department of Agriculture, charged with the enforcement of the federal food and drugs act, it was announced June 21. The full text of the statement follows:

Records of the administration show that 181 so-called "cures," "remedies" and "treatments" for tuberculosis have been proceeded against in court since the food and drugs act was made effective in 1907. Notices of judgment, numbering 358, have been issued against the 181 "cures."

So effective has been the work of the administration in removing this class of drug products from the market that today there are but few medicinal preparations for which their makers make claims of curing tuberculosis, or even mention tuberculosis in the labeling.

Several consignments of an "external tuberculosis remedy" were seized recently, and court action is now pending against them. The makers of this product claim to cure tuberculosis by applying the mixture three times daily to throat, chest, back, and sides.

"Tu-Ber-Ku," "Tuberculoids," "Tuberclecide," "Lunga Heala," "Lung Healer and Body Builder" are the names of only a few of the alleged tuberculosis cures which have been removed from the channels of interstate drug trade by the Food, Drugs, and Insecticide Administration.

Tuberculosis is almost universally present in adults as a latent infection. To keep this tuberculous infection inactive, medical authorities advise a proper amount of work, recreation and rest, a proper amount and quality of food and fresh air. Any drugs, or combination of drugs, bearing curative claims for tuberculosis are in violation of the federal food and drugs act, say the officials of the administration. As such they will be seized and legal action taken to prohibit their sale.

Food Allergy in Infants

The intolerance to certain kinds of food, especially by infants, is an interesting and important subject. It is well known that a child may be hypersensitive to an ordinary food and react with marked symptoms to its use. Bret Ratner, M.D. (*American Medicine*, November, 1928), discusses sensitization or anaphylaxis relative to infant feeding, bringing out many points as to why a child is allergic and why it is necessary to adjust a feeding formula to the individual case. A number of cases of particular interest, as to hypersensitiveness regarding certain food elements, are described in detail. It is pointed out that such sensitization upon the part of the infant may be due to the mother's abnormal desire for an indulgence in certain kinds of food during pregnancy. The study of food allergy in infants must be carefully made in order that the adult may not be a victim of unusual hypersensitiveness to certain foods, and consequently react to many physical as well as more undesirable symptoms.

Action of Morphine

A better understanding of the action of morphine on different parts of the alimentary canal was obtained by animal experiments which showed that the most constant and lasting effect of morphine on gastric motor activity is a decrease in the muscular tone of the stomach wall which outlasts the decrease in amplitude and frequency of peristaltic waves. Diacetylmorphine, codeine, papaverine and nicotine produce similar effects. In the colon the pronounced effect is a marked increase in tone, accompanied by more continuous peristaltic activity. On the basis of these experiments the constipating action of opium may be ascribed to the following: Relaxation of the stomach wall and decrease in peristalsis of the pyloric antrum decrease the rate of discharge of gastric contents into the duodenum. Consequently the stomach contents are distributed in small quantities throughout the small intestine, and this would lead to more complete digestion and absorption. The increase in tone and peristaltic activity of the small intestine would produce more even distribution of the content and further increase absorption. In the colon the marked increase in tone serves to hold back the material from the sigmoid and rectum, facilitates absorption, and renders the residue drier. These factors seem to explain the constipating action of opium. The antidiarrheic action of the opium alkaloids may be explained by the increase in tone of the small and large intestine. The increase in tone of the musculature of both the small and the large intestine, following the administration of the opium alkaloids, will cause more even distribution of the content and lessen the tendency to distension, thus removing one factor in the production of pain.—*Journal A. M. A.*, April 13, 1929.

Plans for Expansion

During the year, plans were completed for a reorganization embodying as its main features the merging of the Rockefeller Foundation and the Laura Spelman Rockefeller Memorial into a new corporation to be known as the Rockefeller Foundation, and the extension of the scope of the new Foundation's activities to include work in the natural and social sciences and in the humanities. A China medical board with independent self-perpetuating trustees to receive the lands and buildings of the Peking Union Medical College, together with an endowment fund and annual appropriations, was also created.

TRANSACTIONS

Sixty-second Annual Meeting, Martinsburg, W. Va., May 21–23, 1929.

Scientific Sections

The sixty-second annual meeting of the West Virginia State Medical Association was called to order at 10 o'clock on the morning of May 21, 1929, at the Central Theatre, Martinsburg, West Virginia, by Dr. Harry M. Hall, president. The address of welcome on behalf of Martinsburg and the Eastern Panhandle Medical Society was delivered by Dr. J. A. Duff, and the response was made by Dr. C. A. Ray of Charleston. The president's address was then delivered by Dr. H. M. Hall, following which Dr. John Deaver, of Philadelphia, read a paper on "Biliary Tract Infection."

The session on the afternoon on May 21 was opened by Dr. Hugh Young, of Baltimore, with the oration on surgery. His subject was "Some Advances in Urology of General Interest." He was followed by Dr. Julius Freidenwald, of Baltimore, who read a paper on "Some Difficulties Encountered in the Diagnosis of Abdominal Conditions." The paper by Dr. Ralph Major, of Kansas City, was read by title on "Chronic Nephrosis." The Canti film cinematographic of "Living Tissue and the Effect of Radium Radiation on the Cells" was then presented by Dr. Frank LeMoyne Hupp, of Wheeling, who secured the film through the courtesy of the American Society for the Control of Cancer.

The evening session was opened at 7:30 o'clock with the showing of the Wertheim Clinic film on "Obstetrics and Gynecology," through the courtesy of the State Health Department. At 8:30 o'clock, Dr. Joseph Collins, of New York City, read a paper on "The Patient's Dilemma, or, How to Select and Manage Your Doctor." Following the paper by Dr. Collins, the convention smoker was held in the Fireman's Hall through the courtesy of the Eastern Panhandle Medical Society.

The Wednesday morning session was opened with the oration on medicine by Dr. D. A. MacGregor, of Wheeling, who chose as his subject, "Diagnosis of Spinal-Cord Tumors." He was followed by Dr. A. W. Armentrout, of Roanoke, Va., who read a paper by Dr. Hugh Trout, of Roanoke,

on "A New Principle in the Surgical Treatment of Varicose Ulcers." Dr. J. H. Stokes, of Philadelphia, concluded the morning session with a paper on "The Eczema Problem."

On Wednesday afternoon the three sectional meetings were held. The section on internal medicine was held in the Central Theatre and was presided over by Dr. H. M. Hall. This program was opened with a paper on "Blood Stream Infections," by Dr. Sydney Miller of Baltimore. He was followed by Dr. M. A. Blankenhorn, of Cleveland, whose paper was on "Oxygen Therapy." Dr. Miller and Dr. Blankenhorn substituted for Dr. John Phillips, who was killed in the explosion at the Cleveland Clinic. Next on the program was a paper by Dr. A. H. Hoge, of Bluefield, on "Diagnosis of Acute and Chronic Gout." This was followed with a paper on "The Occurrence and Significance of Agglutinins for Brucella Abortus in Human Serums in West Virginia," by Dr. Robb Spalding Spray and Dr. Ben W. Hess, of Morgantown. This paper was presented by Dr. Spray.

The section on surgery was held in the Fireman's Hall, with Dr. Robert King Buford of Charleston, chairman, presiding. The section was opened by a paper on "The Treatment of Trauma," by Dr. William O'Neill Sherman of Pittsburgh, read by Dr. J. H. Wagner, of Pittsburgh, in the absence of Dr. Sherman. This was followed with a paper on "Nerve and Muscle Injury in Relation to Fractures," by Dr. A. G. Rutherford of Welch. Dr. John E. Cannaday, of Charleston, then presented a paper on "The Importance of Peritonization in Abdominal Surgery." The section program was concluded by Dr. Dorsey Brannan, of Morgantown, with a paper on "Early Recognition of Some Common Urologic Conditions."

The eye, ear, nose and throat section was held in the Lutheran church auditorium, with Dr. I. D. Cole, of Clarksburg, chairman, presiding. The section was opened with a paper on "The Advantage of the Modified Lothrop Operation Over the Killian Procedure in Chronic Frontal Sinus," by Dr. Samuel R. Skillern, Jr., of Philadelphia. Dr. Skillern was followed by Dr. Edward A. Looper, of Baltimore, whose paper was on "Infection of the Accessory Sinuses." Dr. H. V. King, of Morgantown, then presented a paper on "Medical Economics," and the program was concluded by Dr. G. B. Morison, of Martinsburg, with a paper on "Eye Injury."

The annual convention banquet was held on the evening of May 22 at the Shenandoah Hotel in Martinsburg, with Dr. A. B. Eagle as toastmaster. This was followed by the convention ball, which was also held at the Shenandoah Hotel.

The convention came to a close on Thursday morning, May 23, with an address by Dr. Haven Emerson, noted public health figure of New York City. His subject was, "Private Practice of Preventive Medicine."

Council Meetings

The council of the West Virginia State Medical Association met in the Martinsburg Chamber of Commerce rooms at Martinsburg, W. Va., at 3:30 o'clock on the afternoon of May 20, 1929. The councillors present were: Dr. R. H. Dunn, chairman, and Drs. I. D. Cole, C. G. Morgan, W. E. Vest, R. B. Miller, H. A. Walkup, H. G. Steele, C. H. Maxwell, and J. H. Anderson. Others present were Dr. H. M. Hall, president of the state association; Dr. T. M. Barber, treasurer, and Mr. Joe W. Savage, executive secretary.

On motion of Dr. Vest, the minutes of the December meeting were approved and accepted as published in the February issue of the WEST VIRGINIA MEDICAL JOURNAL.

Next in order of business were the reports of the executive secretary and treasurer, which were read and referred to committee. Dr. Morgan, chairman, then brought up the question of medical defense, and pointed out that most of the members of the association were already covered by blanket insurance policies issued to protect the various county societies. Drs. Vest and Walkup also discussed the question of medical defense, but no motion was offered and no action was taken.

Chairman Dunn appointed Drs. Anderson, Cole, and Vest as a committee of three to draw up a resolution of condolence to be sent to the Crile Clinic at Cleveland, Ohio, upon the death of Dr. John Phillips in the recent explosion and fire at the clinic.

The auditing committees were then appointed by Chairman Dunn. Drs. Steele, Anderson, and Miller were appointed to audit the books and accounts of the executive secretary. Drs. Morgan, Maxwell, and Walkup were appointed to audit the books and accounts of the treasurer.

The reports of the district councillors on the membership and activities in the various districts were then read and accepted. Dr. Morgan reported for the first district, Dr. Maxwell for the second, Dr. Cole for the third, Dr. Vest for the fourth, Drs. Anderson and Steele for the fifth, and Dr. Walkup for the sixth district. All of the districts were in excellent condition, most of them being farther ahead in membership than they were on the same date in 1928.

In the absence of Dr. O. B. Biern, chairman of the committee on scientific work, Dr. Vest reported on the program and said that the program would speak for itself without further comment or explanation.

The election of the committee on medical defense was then taken up, and it was unanimously voted to continue the same committee. The committee is composed of Dr. Morgan, chairman, Dr. Walkup, and Dr. Steele.

On motion of Dr. Walkup, seconded by Dr. Vest, it was unanimously decided to carry the $25,000 life insurance policy on Dr. H. G. Nicholson another year, and the treasurer was authorized to pay the amount of the premium when it fell due on July 1, 1929.

There being no further business, the council adjourned, to meet at 8 o'clock the same evening at the Central Theatre in Martinsburg.

The council of the West Virginia State Medical Association met at 8 o'clock on the evening of May 20 at the Central Theatre, Martinsburg. Those present were Drs. Walkup, Miller, Vest, Anderson, Morgan, Steele, Cole, and Maxwell, councillors. Others present were Dr. H. M. Hall, president of the state association; Dr. C. A. Ray, past president, and Mr. Joe W. Savage, executive secretary. In the absence of Chairman Dunn, the meeting was presided over by Dr. Vest.

The report of the committee to draw up a resolution of condolence on the death of Dr. John Phillips in the Cleveland Clinic disaster was read and referred to the house of delegates for adoption.

The reports of the two auditing committees were then made and accepted for reference to the house of delegates. Dr. Steele reported on the accounts of the executive secretary, having found same to be satisfactory in all details. Dr. Morgan reported on the accounts of the treasurer, having found same to be satisfactory in all details.

Upon motion of Dr. Walkup, the election of the board of publishers of the WEST VIRGINIA MEDICAL JOURNAL was taken up and the same board was elected to serve during 1930. The board is composed of Drs. J. R. Bloss, chairman, Ray, Hall, Vest, and Anderson.

Dr. Walkup then brought up the question of a committee to investigate each year the various places under consideration as meeting places for the state convention the year following. He pointed out the recommendation of such a committee would have considerable force and would tend to keep the house of delegates from making "spur of the moment" decisions on this important matter. No action was taken on this question.

There being no further business to come before the council, the meeting adjourned *sine die*.

House of Delegates Meetings

The house of delegates of the West Virginia State Medical Association met in the Central Theatre, Martinsburg, W. Va., at 8:15 o'clock on the evening of May 20, 1929. Dr. Harry M. Hall, president of the association, presided. Those present were: Drs. W. C. Swann, J. S. Klumpp, R. S. Van Metre, W. Ross Cameron, H. A. Walkup, Claude Frazier, R. C. Hood, Russel Kessel, E. B. Henson, G. G. Irwin, E. P. Smith, H. S. Keister, C. L. Holland, J. C. Peck, C. S. Fortney, R. V. Shanklin, H. G. Steele, David Littlejohn, R. U. Drinkard, H. W. Bond, H. T. Phillips, J. T. Goff, T. L. Harris, R. S. Widmeyer, R. B. Miller, C. H. Hall, W. E. Vest, J. H. Anderson, I. D. Cole, C. H. Maxwell, S. S. Hall, C. A. Ray, C. W. Waddell, C. G. Morgan, C. O. Henry, H. A. Walkup, T. M. Barber, and the executive secretary, Mr. Joe W. Savage.

On motion of Dr. W. C. Swann, the minutes of the last meeting were approved and accepted as published in the July, 1928, issue of the WEST VIRGINIA MEDICAL JOURNAL.

The reports of the secretary and of the treasurer were then read and accepted.

The following reports were read by the executive secretary and accepted: Committee on Professional Relations, Committee on Public Policy, Committee on Permanent Home, and Committee on Insurance. The report of the Committee on Necrology was

read by Dr. C. O. Henry, chairman, and accepted. The report of the Committee on Workmen's Compensation was deferred until the next meeting of the house of delegates.

On motion of Dr. Anderson, the house of delegates ordered that the accounts of the treasurer and of the executive secretary be audited on or near May 1 of each year by a certified public accountant.

In the absence of Dr. O. B. Biern, chairman of the committee on scientific work, the program report was made by Dr. Vest. Dr. Vest pointed out a number of changes that had been made in the program, and said that Dr. Biern had accepted the responsibility for all changes, which had been made with the idea of improving the state meeting. This report was accepted on motion of Dr. Steele.

A tentative report of the publication committee was made by Dr. Vest in the absence of Dr. Bloss, chairman. On motion of Dr. Walkup, this report was deferred until the next meeting.

Dr. Morgan made his report for the committee on medical defense, which was accepted on motion of Dr. Vest. Dr. Steele then spoke upon the medical defense situation over the state, pointing out that most of the members were covered for medical defense by outside insurance companies.

Dr. Steele then reported on the accounts of the executive secretary, stating that the auditing committee had found the accounts to be correct in all details. A similar report was made by Dr. Morgan on the accounts of the treasurer. Both reports were accepted.

The house of delegates voted unanimously to adopt the resolution concerning the death of Dr. John Phillips in the Cleveland Clinic disaster, which read as follows:

Whereas, Dr. John Phillips, of Cleveland, Ohio, a great American physician, an invited speaker and guest at this our annual meeting, has met an untimely death in the line of professional duty; and

Whereas, we feel a sense of deep personal loss both professionally and individually in his tragic ending; and

Whereas, we realize that the world at large has lost a true friend, a physician of outstanding renown, and a distinguished citizen; therefore, be it

RESOLVED, that we extend our heartfelt sympathy to his bereaved family and to his co-workers at the Cleveland Clinic; and be it

RESOLVED, FURTHER, that a copy of these resolutions be spread upon our minutes; a copy be published in the WEST VIRGINIA MEDICAAL JOURNAL, and a copy be given to the lay press.

WALTER E. VEST, Chairman,
J. HOWARD ANDERSON,
IRVING D. COLE,
Committee.

Dr. Harry M. Hall, president, was then instructed to send a telegram to the Cleveland Clinic concerning the recent disaster there, which read as follows:

Martinsburg, W. Va.,
May 20, 1929.

CLEVELAND CLINIC,
Cleveland, Ohio.

The West Virginia State Medical Association, in annual session assembled, extends its sincere sympathy in the most unfortunate and unavoidable disaster which has befallen you. We hope your clinic may arise, Phœnix-like, from its ashes to a field of greater usefulness.

HARRY M. HALL, President.

Without discussion, Dr. Ray offered four amendments to the constitution and by-laws of the association, to lay upon the table for one year before being voted upon. An additional amendment was offered by Dr. Vest and accepted by Dr. Ray. The amendments follow:

"Section 1. The officers of this association shall be a President, three Vice-Presidents, an Executive Secretary, a Treasurer, twelve Councillors to be elected as provided in Section 2, and two Councillors-at-large, who shall be the retiring President and his immediate predecessor.

"Section 2. The officers, except the Councillors, shall be elected annually. The terms of the Councillors shall be for two years, one-half being chosen each year. No Councillor shall be eligible to succeed himself after four years as Councillor, but may be elected after two years' absence from the Council. All these officers shall serve until their successors are elected and installed.

"Section 3. The officers of this association shall be elected by the House of Delegates on the evening of the first day of the annual session immediately following the President's address.

"Section 4. The retiring President shall be Chairman of the Council for the year following his term of office, and shall not be eligible thereafter for any elective office of the association except for delegate to the American Medical Association or Board of Publishers.

"Section 5. The President, the three Vice-Presidents, and the Treasurer of this association shall be members of the House of Delegates by virtue of their respective offices."

Dr. Henry then spoke upon the matter of state legislation as it affected the medical profession, and urged the West Virginia State Medical Association to get into politics at once. He pointed out that it was necessary for each member to play politics if he wanted anything from the politicians. He said, further, that the legislative committee of the association should concentrate upon the senate when the legislature is in session, as more could be accomplished through that body. Dr. Ray endorsed all that Dr. Henry said, and stated that he wanted to see the doctors get into politics. The great trouble in the past, he pointed out, has been in "leaving the party." He urged, however, that, in important measures affecting the profession, the doctors should vote for the men in sympathy with the profession rather than for the men of their own political faith.

On motion of Dr. Ray, a resolution by Dr. Henson, approving the legislative appropriation for crippled children, was unanimously adopted. The resolution read as follows:

RESOLVED, that the West Virginia State Medical Association approves the action of the recent legislature appropriating $40,000 annually for the care of crippled children, which is to be administered by the Crippled Children's Council as appointed by the Governor.

"Be it further resolved that the Council of Crippled Children's Guardians be advised that the West Virginia State Medical Association is at all times willing to coöperate in this human endeavor. It seems only fitting and proper that the word of advice be given this new Council in the care of the crippled children of the state, since it has been the business of the physicians throughout the centuries to care for human ailments, and that their cumulative experience throughout the years should be of great aid in any new undertaking.

"A recent survey by organizations outside of the State show that the hospitals in the State of West Virginia are high in the standardizations set up by national organizations, and this survey also shows that a number of the hospitals are not running at full capacity, which means many hundreds of beds are available for the sick in West Virginia, and, for that reason, we urge the Council of Crippled Children, in organizing their work, to be mindful of that fact and not create any one hospital or base but to utilize those hospitals in the state which are equipped, by equipment and personnel, to carry on this noble work."

There being no further business to come before the house of delegates, the meeting adjourned until 8 o'clock on the morning of May 23 in the Martinsburg Fireman's Hall.

May 23, 1929

The House of Delegates of the West Virginia State Medical Association was called to order in the Fireman's Hall, Martinsburg, W. Va., at 8:35 o'clock on the evening of May 23, 1929, by the president, Dr. Harry M. Hall.

Present were: Drs. W. J. MacDonald, W. C. Swann, O. B. Biern, R. J. Wilkinson, R. S. Van Metre, Everett Walker, S. S. Hall, W. Ross Cameron, B. F. Brugh, H. A. Walkup, Claude Frazier, R. C. Hood, Russel Kessel, W. A. MacMillan, E. B. Henson, G. G. Irwin, M. D. Cure, H. H. Farley, L. W. Lawson, J. C. Peck, C. S. Fortney, H. G. Camper, A. G. Rutherford, R. V. Shanklin, A. H. Hoge, H. G. Steele, F. T. Scanlon, C. F. Boyers, C. B. Wylie, R. J. Armbrecht, R. U. Drinkard, J. W. Gilmore, H. W. Bond, H. T. Phillips, T. L. Harris, H. M. Campbell, B. S. Rankin, T. W. Moore, C. O. Henry, H. P. Linsz, J. E. Rader, J. H. Anderson, George D. Jeffers, James R. Bloss, C. R. Ogden, C. A. Ray, H. M. Hall, C. G. Morgan, C. W. Waddell, C. H. Hall, C. H. Maxwell, John Folk, W. E. Vest, Roy Ben Miller, H. A. Walkup, R. H. Dunn, and the secretary, Mr. Joe W. Savage.

The report of the committee on the president's address was made by Dr. Henry, chairman, as follows:

"We wish to commend the president's address as a scholarly, scientific and literary production, and would emphasize the following recommendations which he has suggested:

"First, we heartily endorse the recommendation that a four-year medical school be established at our state university in Morgantown, and pledge to this movement our fullest coöperation, both by the state association and each component society.

"Second, we recommend that greater effort be made in inducing capable medical men to become candidates for places in our state legislature, to safe-

guard our medical education, abolish quackery, and protect our professional interests and promote public health. To this end we pledge our support to laymen in the legislature who will advance these interests, regardless of party affiliations.

"Third, we favor the establishment of research laboratories in connection with the state university and the state hospitals.

C. O. HENRY.
C. R. OGDEN.
GEO. D. JEFFERS.

The report of this committee was accepted upon motion of Dr. Ray.

Dr. Biern and Dr. Steele then discussed the advisability of holding the annual election of officers after the sceintific meeting on the last day of the convention instead of before this meeting. The discussion was ruled out of order by President Hall and the election of officers was taken up.

On motion of Dr. Biern, seconded by Dr. Steele, Dr. Walter E. Vest, of Huntington, was unanimously elected president of the association, to serve during the year 1930. Other officers, all of whom were unanimously elected, were as follows: Dr. A. B. Eagle, of Martinsburg, first vice-president; Dr. R. V. Shanklin, of Gary, second vice-president; Dr. F. T. Scanlon, of Morgantown, third vice-president; Dr. T. M. Barber, of Charleston, treasurer.

Councillors elected to serve during 1930 were: Dr. C. G. Morgan, first district; Dr. C. H. Hall, second district; Dr. S. S. Hall, third district; Dr. O. B. Biern, fourth district; Dr. H. G. Steele, fifth district, and Dr. H. A. Walkup, fifth district.

The 1930 committee on scientific work was elected as follows: Dr. Howard T. Phillips, of Wheeling, chairman; Dr. R. C. Hood, of Clarksburg, and Dr. Robert King Buford, of Charleston.

In the committee elections, Dr. A. G. Rutherford was elected to succeed himself on the committee on professional relations; Dr. C. O. Henry was elected to succeed himself as chairman of the committee on necrology; Dr. John N. Simpson, of Morgantown, was elected to succeed himself on the committee on medical education and the other two members to be retained; Dr. W. A. MacMillan, of Charleston, was reëlected chairman of the committee on workmen's compensation, and Dr. C. A. Ray and Dr. John E. Cannaday, of Charleston, were reëlected as members of that committee; Dr. David Littlejohn, of Charleston, was reëlected as chairman and Dr. John Thames, of Charleston, and Dr. W. A. McLain, of Wheeling, were reëlected as members of the committee on public health.

Dr. Henri P. Linsz was reëlected as the delegate to the American Medical Association convention, with Dr. R. U. Drinkard, of Wheeling, as alternate.

The place for the 1930 meeting was then taken up, and the vote as announced stood as follows: White Sulphur Springs, 36; Clarksburg, 15; Elkins, 7, and Parkersburg, 4. President Hall declared White Sulphur Springs to be the place for the 1930 meeting.

The question was then brought up by Dr. Biern relative to holding the election of officers following the scientific meeting instead of before the scientific meeting on the last morning of the convention. This was discussed at considerable length by Dr. Biern, Dr. Ogden, Dr. Wilkinson, Dr. Armbrecht, Dr. Henson, Dr. Bloss, DBr. Ray, Dr. Henry, and Dr. S. S. Hall. At the request of Dr. Vest, newly elected president, the house of delegates was asked to interpret the by-laws pertaining to the election of officers. Dr. Biern's original motion, which was introduced for the purpose of holding the election after the scientific meeting, was then voted upon and carried. A motion, by Dr. Henson, to confine the scientific papers to two days was previously voted upon and was lost.

Upon securing unanimous consent to offer an amendment to the by-laws of the association, Dr. Ray offered the following amendment, pertaining to the chapter on medical defense:

RESOLVED, that the by-laws be amended by striking out Chapter XI, with all its sections referring to medical defense, and on and after December 31, 1929, all funds remaining in said defense fund be transferred to the general fund of the association; that all cases now pending and all others that may arise against members of the association before that date shall be defended and paid as heretofore, provided for in this Chapter XI.

Dr. Ray moved the adoption of the resolution. This motion was seconded and carried.

Upon motion of Dr. Biern, the president, Dr. Harry M. Hall, and the other officers of the association were given a rising vote of thanks for their services during the year.

Dr. Vest, newly elected president, was then called upon and spoke as follows: "There are times when we are wavering between a sense of pleasure and a sense of inability to express ourselves. You gentle-

men have conferred upon me the greatest honor it was in your power to give. You have given me this honor unanimously, and it has come more flattering that way than it does any other way. I want to assure you that I appreciate that honor, that I feel my unworthiness to serve you, but that I will serve you the best that I can."

Upon motion of Dr. Rankin, a resolution was unanimously adopted, expressing the deep appreciation of the association to the citizenship and the profession in Martinsburg for their wonderful entertainment.

There being no further business, the house of delegates adjourned *sine die* at 10 o'clock A.M.

COMMITTEE REPORTS

Professional Relations

The Committee on Professional Relations has not been as active during the past year as heretofore, for three reasons:

1. The luncheon-club-speaker plan ran its course a short time after the Fairmont meeting last year, when we had exhausted our supply of prospective audiences. This plan, however, should be ready for repeat action in another twelve months.

2. A large part of our newspaper publicity was done away with because it was more or less a repetition of similar work carried on by other organizations.

3. It was necessary to curtail our activities to some extent because of the increased work placed upon the association through the 1929 session of the state legislature.

Our actual work along the lines of professional relations has been to secure the coöperation of the Associated Press in West Virginia. We have been unusually successful along this line, especially when you consider the strict rules under which members of the Associated Press operate. We have been able to place a number of live news stories in the day reports of the Associated Press, which were carried all over the state. As an example, through the coöperation of the Eastern Panhandle Medical Society, we were able to get the entire program of the state meeting carried by the Associated Press. This was not only the most efficient method of handling this news, but it saved many hours of labor in the office of the executive secretary.

The newspaper stories that have been sent out by this committee have dealt with facts that carried an immediate news value. We adopted, with the permission of the council, a definite plan to advertise each issue of the WEST VIRGINIA MEDICAL JOURNAL. As soon as the journal is off the press, a story dealing with the contents of that issue is mailed out to the state newspapers. These news stories endeavor to call attention to the papers written by the men in the state, thereby giving the stories their news value. This plan is beginning to meet with considerable success, and more of the newspapers are using this material every month. It is a simple matter to send out newspaper publicity, but it is an entirely different proposition to get it published. We believe, however, that by giving an immediate news value to all publicity, as we are doing with our present plan, we will get better results than in any other way.

It was stated earlier in this report that our luncheon-club-speaker plan had run its course. The committee feels that this plan has unusual merit, and, as soon as the time is ripe, it will again be concentrated upon. We started the last campaign about the first of May, 1928, and carried on for about three months. During that time we supplied about twenty-five speakers for various luncheon clubs throughout the state, and we stopped only after soliciting all of the clubs in West Virginia. We expect to launch our second campaign some time next spring.

The committee wishes to enlarge upon its statement that "a large part of the newspaper publicity is more or less a repetition of similar work carried on by other organizations." Every day this fact becomes more apparent. The state health department has a paid staff of publicity agents whose business it is to send out health copy to the state newspapers. Many of the city and county health officers publish regular health articles in their home papers. *Hygeia* and the Rockefeller Foundation send health copy to the West Virginia newspapers. The West Virginia Tuberculosis Association and the Red Cross both specialize in this work. The newspapers, we feel, are so "fed up" on health copy that they won't look it square in the face. Further, we feel that the results of such health publicity do not in the slightest degree repay us for the time spent in preparing copy. Only one other state that we know of continues to send out health copy, and the news stories from that state are almost identical with the stories released by our own state health department.

Whether or not the county societies can accomplish anything along this line is simply a problem for each county society to decide for itself. Cabell county has already solved the problem. Coöperating

with their local radio broadcasting station, the various members of the Cabell County Medical Society take turns in broadcasting health talks once each week. The speaker is announced as "Dr. Goodhealth." The committee feels that Cabell county is to be congratulated and commended upon their accomplishment.

In closing, we wish to earnestly request any suggestions from members of the association that will tend to further the service of your committee on professional relations.

J. R. SHULTZ, Chairman.
A. G. RUTHERFORD.
W. R. GOFF.
HUGH G. NICHOLSON.
E. P. SMITH.

Public Policy and Legislative

We wish to submit the following report of the activities of the legislative and public policy committee during the past year:

Your committee met with the executive secretary of the health council of West Virginia and agreed upon certain bills that we would all sponsor before the West Virginia legislature. This meeting was harmonious and we agreed upon general policies that would be to the interest of the medical profession in general and the public in particular.

We should give much credit to our general headquarters for the coöperation that was accorded in following the details necessary for the protection of our association during the session of the state legislature. Your secretary, Mr. Joe W. Savage, compiled the following report:

There was only one bill that passed both houses at the last session of the legislature that was of direct concern to the medical profession of West Virginia. The bill in question was House Bill No. 160, which amended the medical practice act to the extent of allowing the state board of medical examiners to recognize and grant licenses to all applicants who had successfully passed the requirements of the National Board of Examiners.

The passage of this measure was in conformity with the policy of the legislative committee of the West Virginia State Medical Association, and had the backing of the association. Similar measures have already been adopted by a majority of the other states in the union. The bill was sponsored by Dr. W. T. Henshaw, state health commissioner, and Dr. Henshaw requested the support of the association before having the bill introduced.

Your committee, together with various social agencies of the state, took an active part in preparing and presenting an act to provide for the care of the feeble-minded children of the state. So faithfully was this work done that $150,000 was provided to make a beginning toward the care and training of the unfortunate feeble-minded children. This is especially commendable, because it has been determined that more than half of the population of our penitentiary are feeble-minded.

There were several bills passed by the recent legislature of indirect interest to the medical profession. One of these was known as House Bill No. 55, which authorized treatment for venereal disease of all girls sentenced to the industrial home at Salem. This treatment is to be carried out either in the Miners' Hospital at Fairmont or at the State Hospital at Huntington.

A second bill was House Bill No. 267, which authorized the maintenance of the present county hospital for Monongalia county, near Morgantown. Such maintenance and operation is under the direction of the Monongalia county court, and this court will continue to have jurisdiction over the institution.

A third measure was Senate Bill No. 31, providing for the sterilization of certain inmates of state institutions. This bill also had the approval of the association and several members of the legislative committee attended the hearing on the bill before the committee on medicine and sanitation of the House. It is interesting to note that, before any inmate of a state institution can be made sterile, certain notices must be published in the newspaper in the town or county where the inmate formerly lived, the inmate's relatives must be consulted, and the inmate himself has every privilege of appeal.

A fourth measure was Senate Bill No. 200, amending the present workman's compensation law. This was known as a "ripper" bill, introduced for the purpose of ousting Commissioner C. L. Heaberlin. The present law remains practically the same, with the exception that the Governor is ordered to appoint a workman's compensation commissioner on or before May 31, 1929, for a term of six years. The medical profession is interested in this bill only to the extent of being interested in the person of the commissioner. Governor Conley has been given the right to appoint a new commissioner. He may, if he so desires, reappoint Commissioner Heaberlin. The real purpose of this bill will not be known until some action is taken by the Governor of West Virginia.

A fifth measure, known as Senate Bill No. 225,

relates to the practice of dentistry and is of interest simply because its passage shows the power of the irregular practitioners of dentistry. This bill was strenuously opposed by the ethical dentists of West Virginia. Unfortunately, this opposition was not apparent until after the bill was enacted into law. An attempt to reconsider was lost by only one vote. Had the dentists been on the job, they could have easily killed this bill.

The bills in which the association was interested and which did not pass were as follows:

H. B. No. 134—Obtaining credit at hospitals with intent to defraud. Killed on second reading in the house on motion of E. Leslie Long, of Harrison county.

H. B. No. 234—Repealing the law creating special examining board for osteopaths. Killed in the House by rules committee.

H. B. No. 238—Relative to practice of medicine without license. This bill was sponsored by the association but was declared unconstitutional and died on second reading.

H. B. No. 302—To abolish McKendree Hospital and convert same into a home for indigent colored people. Killed by being kept off special calendar in closing days of session.

H. B. No. 347—Automobile liability insurance law. Got off to good start and had a good bit of support. The idea was too new to get over, however, and it was kept off special calendar. Should pass in 1931, with a little backing and management.

S. B. No. 140—Exempting hospitals from taxation. This bill had some powerful men behind it, but the job was too great. The bill was passed over by the Senate rules committee.

S. B. No. 68—A bill to regulate hospitals owned by public utility companies. This bill had powerful backing, but was eventually blocked and failed of passage. The association did not interest itself in this bill because there were so many members both for and against the measure.

S. B. No. 213—A bill relating to the examination and registration of nurses. This bill also had powerful backing, but failed of passage. The association did not interest itself in bill because there were many members both for and against the measure.

H. B. No. 238—Relative to practice of medicine without license. This bill was sponsored by association but was declared unconstitutional and died on second reading.

Too much credit can not be given to the members of our association who are members of the state legislature. They were tireless in their efforts in our behalf and the work of your committee would have been of little effect before the legislature if it had not been ably guided by our members who worked so faithfully for us.

Yours respectfully,

R. A. IRELAND, Chairman.
R. H. WALKER.
JAMES MCCLUNG.
C. R. OGDEN.
D. A. MACGREGOR.

Permanent Home

There have been four outstanding developments in the work of your permanent home committee since the meeting at Fairmont last year.

1. The McDowell County Medical Society has voluntarily agreed to set aside a certain percentage of its net surplus at the close of each fiscal year into a building fund for the state association. This fund, which has already been created, will be turned over to the state association at such time as the association sees fit to either purchase or build a state home in Charleston, West Virginia. No request was made of the McDowell society or any other society to establish such a fund.

2. Although it will probably be several more years before we can work out a tangible program toward the erection of a state home, a step in the right direction has been taken with the recent removal of the state offices from two small rooms in the Professional Building to a three-room suite in the public library building at Charleston. In the new quarters a state medical library is rapidly being established and built up. Also, there is sufficient room to hold meetings and gatherings with as many as forty or fifty members in attendance. This move was made possible by the action of the Kanawha Medical Society, which society has agreed to pay, and has paid, the sum of $120 per year to take care of the additional rent.

3. The Kanawha Medical Society has not only paid its share of the rent for one year in advance, but it has agreed to pay half of the cost of furnishing the largest of the three rooms as a library room. The furniture has already been purchased and the Kanawha Medical Society has discharged its obligation.

4. No canvass or campaign has ever been made to raise funds for the erection of a state home, and no canvass or campaign will be made until the time is ripe to do so. However, on various occasions, I

have had an opportunity to broach the subject to various members of the state association residing in the southern part of the state. Without any effort or design, I have already taken subscriptions amounting to one thousand dollars toward the erection of a state home. All of these subscriptions have been voluntarily made. In my opinion, this amount could easily be raised to four or five thousand dollars in Charleston alone through an efficient canvass at the proper time.

I give you this information not so much to show you what has been done but as a barometer by which to judge the sentiment in favor of a state home. Undoubtedly the time may not be ripe for definite action. However, when we consider the voluntary strides that have been made during the past twelve months, we can not help but feel that we are getting nearer to our goal.

I understand that the financial affairs of the association and of the WEST VIRGINIA MEDICAL JOURNAL are in excellent shape. If we continue to prosper, I hope that this body will see fit, in one or two more years, to create a building fund of some kind, so that we will have something definite to work on. The creation of such a fund would be a significant gesture on the part of the association, and would, in my opinion, give added impetus to the state home movement.

In closing, let me say that it has been a pleasure to serve as chairman of your permanent home committee, and, if reappointed, I will continue to give this movement my own best efforts.

Permanent Home Committee,
W. P. BLACK, Chairman.
W. B. STEVENS.
E. L. ARMBRECHT.
L. V. GUTHRIE.
C. O. HENRY.

Committee on Insurance

At the Fairmont meeting last year the undersigned committee was appointed to inquire into and report on some form of group life insurance. The committee has investigated this subject as fully as we are able to do. In this investigation we have had the active coöperation of the secretary, Mr. Joe Savage, and are indebted to him for a careful and intelligent study of this subject. The committee is also indebted to Mr. Bob Garred, of this city, who has worked in coöperation with Mr. Savage and has rendered valuable help.

We found that, among the various companies offering this kind of insurance, the American National Life Insurance Company, of Galveston, Texas, best meets our particular needs. This company is financially sound, as far as we are able to determine, and has met with the requirements of the state insurance commissioner. The contract which this company offers is, briefly, as follows: If 75% of the paid-up members under 65 years of age apply for this insurance, a rate will be given which the company now believes will not exceed $14.00 a year per thousand, and this rate will be in effect for five years. All these policies are written for $3,000.00. The exact cost of this insurance will depend on the average age of the members applying for it. The younger the age average, the cheaper the insurance. At the end of five years a new rate will be issued, and this rate will again depend on the average age of this group. It is, of course, likely that the average age of the group will not materially change from year to year.

The committee circularized the members of the association on two occasions and received total applications in the number of 381. Since this was too small a group to work with, we have carried a full-page advertisement in the March, April and May issues of the JOURNAL. As a result of this, 36 additional applications have come in, so that we now have a total of 417. We still need approximately 200 applications in order to secure the rate which is based on 75% of the eligible membership.

Mr. Bob Garred, who will probably act as our insurance broker in case this policy is written, will be at the Martinsburg meeting and will occupy one of the commercial exhibit booths, where applications for this policy may be made. The committee recommends that your action on this matter be deferred until the last meeting of the House of Delegates. At that time we shall know definitely whether or not we have the necessary 75% of the members, and you will then be in a position to dispose finally of it.

Sincerely yours,
J. ROSS HUNTER,
G. C. SCHOOLFIELD,
O. B. BOBBITT,
Committee.

Workman's Compensation

Your committee takes pleasure in reporting that the past year has been one of few complaints on the part of the medical profession regarding the question of state compensation. Since our last meeting there

seems to be a clearer understanding between the compensation department and physicians throughout the state.

Upon taking up this question of further improvement regarding our relations with the State Compensation Department, one of the committee suggested the increase of rates. The state of West Virginia pays a higher fee than some states of the union and less than others. Your chairman took this matter up with Mr. Heaberlin, at the head of the Workmen's Compensation Department, and I herewith read his report as follows:

"*Dear Doctor MacMillan:*

"Agreeable with your request, I give you the following pertinent points with reference to the Compensation Fund. An analyzation as of July 1, 1928, shows that we had at that time 2,505 widows and 5,934 fatherless children, in addition to hundreds of other dependents, as fathers and mothers, and a large number of total disability cases that will be on the Compensation Fund for the remainder of their lives. An analyzation of the injuries reported for an eighteen-months' period, beginning July 1, 1927, to January 1, 1929, shows 65,379 compensation injury cases. Out of these injuries, 1,030 were fatal, leaving a great number of additional widows and orphans on the fund.

"The total income of the department since its organization is $53,183,567.97, at the close of business March 31, 1929; $34,599,380.72 has been paid to claimants, including medical and hospital cost. Total administrative cost for the entire period of the fund up to that time was $1,927,015.32. Total assets of the department at the close of business March 31, 1929, were $16,657,171.93, the average administrative cost being less than 4% of the total income.

"The department is growing rapidly. Over one thousand new and additional subscribers of various industries of the state have come into the fund since July 1, 1927. You are familiar with the extent of the improvements that have been made here in the handling of claims and accounts, in the installation of better medical equipment, bookkeeping machinery, etc. We have room for improvement yet, and we hope to make this one of the best and most efficient departments of any state of the union.

"I am enclosing a statement of the various legislative amendments from time to time, increasing benefits, which, if you will peruse, you will find the real cause for increase in compensation cost, compensation benefits having been increased by the legislature to an extent that made it absolutely necessary that rates be increased.

"If I can be of any further service to you or your association at any time, please do not hesitate to call on me.

"I might say, in conclusion, that I find the cooperation and helpful suggestions of the medical fraternity, as a whole, have improved wonderfully in the last year, and I am very proud of the fact that they are willing to help solve the problems in a sensible and careful way.

Yours very truly,

C. L. HEABERLIN,

CLH:DK Commissioner.

COMPARATIVE STATEMENT OF COMPENSATION BENEFITS AS INCREASED BY LEGISLATIVE AMENDMENTS FROM TIME TO TIME, TOGETHER WITH PREMIUM RATES

1918.—Base rate on coal, $2.00; minimum rate, $1.00; maximum rate, $4.00. Benefits provided in the act for temporary disability, not less than $5.00 per week or more than $10.00 per week, based on 50% of the past average weekly earnings. Permanent disability, minimum $4.00 per week, maximum $8.00 per week. Each 1% of disability carried three weeks' benefits; that is to say, an injury resulting in 50% disability entitled a claimant to 150 weeks' payment. Widows, $20.00 per month and $5.00 for each child, not exceeding three children, or a maximum of $35.00 per month for a widow and all children.

1919.—Base rate on coal reduced to $1.75; minimum 87.5%, maximum $3.50. Benefits increased by legislative amendment as follows: weekly rate for temporary disability increased from $10.00 to $12.00 per week; for total permanent disability, rate increased from $8.00 per week to $12.00 per week. Payment for each 1% of disability increased to four weeks' benefits, a 50% disability carrying 200 weeks' benefits as against 150. Widows remained at $20.00 per month; benefits to children at $5.00 per month to include all children belonging to the widow under fifteen years of age. Funeral benefits increased from $75.00 for each fatality to $150.00.

1923.—Legislative amendment increased benefits to claimants, weekly rate on temporary and permanent disability from $12.00 to $16.00 per week maximum; base of calculation for maximum increased from 50% of the former average weekly earnings to 66 2/3% of the former weekly earn-

ings. Widows' benefits increased from $20.00 to $30.00 per month. Age limit of payment of children increased from 15 to 16 years. Benefits to orphan children increased from $5.00 per month to $10.00 per month. Premium rates remained the same as in 1919.

1925.—Legislative amendment increased medical, surgical and hospital allowance from a maximum of $300.00 in each case to a maximum of $800.00 in each case. Minimum payment to injured employees increased from $5.00 per week to $8.00 per week. Premium rates remained the same as in 1919.

The act was also amended in the session of 1923, permitting state hospitals to charge full fees for the treatment of compensation cases that, under the act up to that time, they had been required to treat without charge. This added thousands of dollars to the medical and hospital cost of the fund payable to state hospitals.

Note this concrete example: In 1918, the maximum possible charge against an employer's account for the loss of an index finger was $240.00. Under the act as amended in 1923, the maximum charge to the fund and payable to the claimant for loss of an index finger is $460.00.

The fund continued to operate on the 1919 scale of rates up to the October rate period of 1926. These facts show that the benefits to claimants have been increased since 1918 by legislative amendments from time to time more than 100%.

How could rates remain the same?

(Note: Coal class used here as an example. Same is applicable to all other classes. No legislative increase in benefits made in the session of 1921.)

The various needs of the legislature show an increase in the rate paid the injured as well as the hospitals and physicians of our state, and still there has been no legislative increase in the rate. It is impossible for the compensation rates to remain the same, for our conditions are constantly changing. Your committee is of the opinion that the head of the compensation department is always willing and pleased to receive suggestions of the state medical association, and it is his wish that a clear understanding will always exist between our association and his department.

It is very difficult for public servants to please everybody. I might say that the fuss of the last legislature was, in the minds of most people and your committee in particular, one of politics and the desire of a certain group of men trying to get control of the office already held by our state compensation commissioner.

Respectfully submitted,

W. A. MACMILLAN, Chairman.
C. A. RAY.
JOHN E. CANNADAY.

Committee on Necrology

The committee on necrology has the sad duty of reporting to this body the untimely deaths of the following respected and honored members of our profession:

GUSTAVUS B. HEDGES, Martinsburg.
G. R. DAVIS, Charleston (honorary member).
J. B. WINFIELD, Clarksburg (honorary member).
DAVID MOTT, JR., Morgantown.
HUGH STRACHAN, Blaine.
W. C. KELLY, Morgantown (honorary member).
W. U. CHARLTON, Wheeling.
HUGH CARR, Fairmont.
W. C. ETZLER, Wheeling.
B. M. CHENOWETH, Wendel.
J. L. DICKEY, Wheeling.
J. W. RICKEY, Moundsville.
S. D. FEW, Parsons.
J. H. THORNBURY, Stowe.
E. S. BUFFINGTON, Huntington (honorary member).
R. E. VICKERS, Huntington.
D. E. MUSGRAVE, Barboursville.
T. H. CHANEY, Fairmont.

Executive Secretary

My report this year, as last year, will be short and to the point. It will deal principally with membership and with the finances of the WEST VIRGINIA MEDICAL JOURNAL—the two things over which my office has almost sole jurisdiction.

In narrowing this report down to membership and finance, I hope it will not be thought that the office of the executive secretary has no other interests. These other interests cover every activity of the state association, but they are not dealt with here because they are all covered in the various committee reports. To mention the work with the recent legislature would be to cover the same ground that will be covered in the report of the committee on legislation. To mention the publicity work would be a repetition of the report of the committee on

public policy. The same holds true with the committee on scientific work, the committee on medical defense, and all the others. My office has attempted to assist all of the committees in every way possible, with the idea of service foremost in mind. It has furnished relief doctors and permanent assistants to many members of the association. It has looked up and settled a large number of workmen's compensation claims. It has written an ever-increasing number of automobile insurance policies. It has carried on an extensive amount of work in connection with the group life insurance plan now under consideration. It has inaugurated and gotten a small start for a state medical library. It h handled all correspondence. It has carried on its normal functions in a manner that I hope has met with your approval.

Perhaps the most gratifying portion of this report will be that which deals with the association membership. When the state meeting was held at White Sulphur Springs in June, 1927, there were 874 paid-up members of the association. When the meeting was held last year in Fairmont, in May, there were 971 paid-up members. Today we have 1,005 paid-up members. At White Sulphur Springs we had 173 delinquents; at Fairmont we had 153 delinquents. Today we have 95 delinquents. These figures should show a wholesome growth of the association and they should also show that there is a great deal more interest on the part of the members in the association. I have mentioned that this report on membership is gratifying. I say this because no grandstand plays and no frenzied efforts were made to beguile the members into paying their 1929 dues.

Another feature of the membership situation lies in the fact that we now have nine county societies with 100% paid-up membership. These societies are Brooke, Cabell, Doddridge, Fayette, Marshall, Monongalia, Preston, Summers, and Wayne. Fayette county was the first to report a full paid membership roster, and Fayette county has 57 members. Cabell county, with 76 members, is the largest society in several years to have a full paid membership roster. Monongalia county is another deserving of commendation, with 50 members. Only two societies have more than 10 delinquent members, and no society has as many as 15 delinquents.

Doctors in Wetzel and Wyoming counties have written my office for information relative to the formation of new county societies. It is hoped that new societies can be formed in these two counties before the year is out.

JOURNAL REPORT.—When the report on the JOURNAL was made at White Sulphur Springs there were outstanding debts of $630.50 and a bank balance of $53.03. The report at Fairmont last year showed that the indebtedness had been wiped out and that the JOURNAL had a savings account of $1,000. As the JOURNAL was making money, it was decided by the board of publication to make a number of improvements at the first of the year. The Metropolitan Engraving Company, of Richmond, Va., designed for us an attractive cover plate and later made up the zinc etching. We purchased, from the Mergenthaler Linotype Company, our own font of type, which we selected to suit our needs. This type is kept with our printer, but it is our property. We changed the grade of paper from book to enamel, and we increased the number of pages from 84 to 100. These additional pages made it necessary to side-stitch the cover, which further increased the cost of printing. In addition to the money we paid out for immediate improvements, it has cost us approximately $80 more per month to get out the JOURNAL since the first of January. We felt that we could do all this and still keep the JOURNAL on a paying basis.

One of the very satisfactory results of our improvements was an almost immediate increase in the volume of advertising. Prior to January this volume occasionally reached $500, but rarely went above that figure. In our May JOURNAL the advertising went over the $600 mark and was the largest month we have ever had.

At the present time, our $1,000 of last year has been increased to $2,323.09, represented by cash in the bank, with no outstanding debts. In addition, we have approximately $500 in live accounts on our books that can be considered in with the JOURNAL's assets. This $500, however, is not a part of the $2,323.09, which figure represents actual cash. The JOURNAL's only revenue is from its advertisers.

The accompanying financial statement covering finances of the JOURNAL, the funds received from membership and the expense of operating the office of the executive secretary will be presented to the auditing committee for approval. I have brought with me all books of original entry, together with my bank books and canceled vouchers. Without objection, I will present herewith only a summary of the various totals, which will give you the receipts and expenditures month by month of the association and the JOURNAL.

MONTHLY EXPENSES *
OFFICE OF THE EXECUTIVE SECRETARY

January	$ 733.26
February	746.89
March	489.53
April	629.14
Total	$2,598.82

Funds Forwarded to State Treasurer

January	$1,468.00
February	1,953.00
March	4,411.50
April	1,678.00
Total	$9,510.50
Balance on hand	258.00
Total funds received	$9,768.50

* This monthly expense account is only made up from January 1, 1929, as executive secretary's books were approved up to that time at the December council meeting.

FINANCIAL STATEMENT
WEST VIRGINIA MEDICAL JOURNAL
(January 1 to May 15, 1929)

	Cash In	*Cash Out*
Savings account	$1,426.90	
Cash on hand, Jan. 1, 1929	339.78	
January receipts	430.39	
January expenditures		$ 444.27
February receipts	440.16	
February expenditures		370.66
March receipts	384.64	
March expenditures		376.78
April receipts	455.75	
April expenditures		370.23
May receipts (to May 15)	407.41	
Balance cash on hand (May 15)		2,323.09
	$3,855.03	$3,855.03

Treasurer
May 20, 1929

		Receipts	
1928			
May	21	Balance on hand	$ 5,635.98
		Savings acct. $ 102.42	
		Checking acct. 5,533.56	
June	29	H. G. Nicholson (insurance)	101.64
July	3	J. Savage, dues	510.00
"	5	H. G. Nicholson (via J. Ray)	400.00
"	27	H. N. Roberts (interest)	30.00
Oct.	3	J. Savage, dues	218.25
Dec.	24	J. Savage, dues	164.17
"	28	Interest on savings acct.	1.53
1929			
Jan.	14	Joe Savage, dues	70.50
Feb.	1	Joe Savage, dues	1,468.00
"	5	H. N. Roberts (note and interest)	1,031.50
April	4	J. Savage, dues	4,411.50
Mar.	1	J. Savage, dues	1,953.00
May	1	J. Savage, dues	1,678.00
"	18	Interest on savings acct.	1.54
			$17,675.61

		Disbursements	
1928			
June	6	J. Savage, May expenses	$ 562.57
July	3	J. Savage, June expenses	734.55
"	3	Medical Defense Fund	51.00
"	3	Indigent Fund	51.00
"	10	Geo. Washington Life Insurance	1,301.00
Aug.	5	J. Savage, July expenses	539.99
Sept.	8	J. Savage, August expenses	570.50
Oct.	3	J. Savage, September expenses	529.95
Nov.	7	J. Savage, October expenses	780.05
Dec.	6	J. Savage, November expenses	539.58
"	24	Medical Defense Fund	21.82
"	24	Indigent Fund	21.82
"	24	Medical Defense Fund	16.41
"	24	Indigent Fund	16.41
1929			
Jan.	8	J. Savage, December expenses	710.84
Feb.	4	Medical Defense Fund	5.25
"	4	Indigent Fund	7.25
"	4	J. Savage, January expenses	733.26
"	4	Medical Defense Fund	145.00
"	4	Indigent Fund	147.00
Mar.	7	J. Savage, February expenses	746.89
April	5	Medical Defense Fund	432.25
"	5	Indigent Fund	442.25
"	8	J. Savage, March expenses	489.53
May	3	J. Savage, April expenses	629.14
"	3	Indigent Fund	197.00
"	3	Medical Defense Fund	180.00
"	3	Indigent Fund	168.00
"	3	Medical Defense Fund	166.00
		Balance in Bank	6,739.30
		Capital City Bank $4,211.50	
		Citizens National 2,422.31	
		Kanawha Valley 105.49	
			$17,675.61

		Indigent Fund	
1928			
May	21	Balance on hand	$ 1,990.56
July	1	Interest	14.24
"	3	Account July 3	51.00
Dec.	24	Account October 3	21.82
"	26	Account December 24	16.41
Jan.	1	Interest	30.82
Feb.	4	Account January 14	7.25
"	4	Account January 31	147.00
April	4	Account March 30	442.25
May	4	Account March 1	197.00
"	4	Account May 1	168.00
			$ 3,086.35

		Spent	
1929			
Jan.	7	Federal Land Bank Bonds (see letter)	$ 1,525.00
May	20	Balance in Bank	1,561.35
			$ 3,086.35

		Medical Defense Fund	
1928			
May	21	Balance on hand	$ 1,900.66
July	3	Account June 30	51.00
Dec.	24	Account October 3	21.82
"	26	Account December 24	16.41
July	1	Interest	16.02
1929			
Feb.	4	Account January 14	5.25
"	4	Account January 31	145.00
April	5	Account March 30	432.25
May	4	Account March 1	180.00
"	3	Account May 3	166.00
Jan.	1	Interest	21.25
			$ 2,955.66

		Spent	
1928			
June	18	Dr. Gocke	300.00
"	18	Dr. Langfitt	250.00
Mar.	23	P. M. & B. for Dr. Fisher	150.00
			$ 700.00
		Balance in Bank	$ 2,255.66

Balance in General Fund	$ 6,739.30
Balance in Indigent Fund (including bond)	3,086.35
Balance in Medical Defense Fund	2,255.66
	$12,081.31

The West Virginia Medical Journal

Directed and Edited by the Committee on Publication

[The Committee on Publication is not responsible for the authenticity of opinion or statements made by authors or in communications sbumitted to this Journal for publication. The author or communicant shall be held entirely responsible]

JAMES R. BLOSS, *Editor-in-Chief* - - - - - - - - Huntington

ASSOCIATE EDITORS:

WALTER E. VEST, Huntington — HARRY M. HALL, Wheeling — J. HOWARD ANDERSON, Marytown — C. A. RAY, Charleston

MR. JOE W. SAVAGE, *Secretary-Business Manager*, Charleston

Entered as Second Class Matter, January 1, 1926, at the Postoffice at Charleston, West Virginia

Vol. XXV — AUGUST, 1929 — No. 8

CHRONIC NEPHROSIS: IS IT A CLINICAL ENTITY? *

By RALPH H. MAJOR, M.D.
Kansas City, Mo.

Old diseases often become more interesting when they are dressed up in new clothes and introduced to the public under a new name. Charles Stratton was a very interesting little dwarf, but, introduced to the public as General Tom Thumb, he instantly became a world celebrity. Hopkins wrote for many years about "accessory factors of diet" without creating a ripple on the surface of contemporaneous thought, but as soon as Funk talked about the same substances and called them "vitamines" the whole world, both medical and lay, woke up and became tremendously interested in the discovery.

There are many very competent students of kidney disease at the present time who feel that the old acquaintance, "chronic parenchymatous nephritis," described and so christened by Bartels in 1877, passed along through successive editions of standard textbooks without attracting undue attention until Friedrich Mueller, in 1905, began to talk about "nephroses" and at a somewhat later date Munk began to write about "lipoid nephrosis" and Epstein described a condition which has been generally known in this country as "Epstein's nephrosis."

Osler, in the first edition of his *Practice of Medicine*, published in 1892—thirty-seven years ago—gave us the following clinical picture of "chronic parenchymatous nephritis":

"The urine is, as a rule, diminished in quantity, often scanty. . . . The albumin is abundant and may amount to one-half or one-third of the urine boiled.

"Dropsy is a marked and obstinate symptom of this form of Bright's disease. The face is pale and puffy and in the morning the eyelids are edematous. The anasarca is general and there may be involvement of the serous sacs. . . . The complexion is pasty, the pallor marked and the eyelids edematous. . . . The dropsy is peculiarly obstinate.

"There are instances of this form of nephritis in which the heart is not enlarged. . . . Occasionally, in children, even when the disease has persisted for two years, the symptoms disappear and recovery takes place."

This description of chronic parenchymatous nephritis, we must admit, regardless of which side we take in the controversy, is a very excellent clinical description of the patients to whom Munk and Epstein, particularly, have directed our attention the last few years.

In this paper I shall attempt a discussion of the clinical picture, the laboratory data and the pathological findings in the condition described by Munk as "lipoid nephrosis" and by Epstein as "chronic nephrosis." The opinions expressed are based on an

* Read by title before the West Virginia State Medical Association at Martinsburg, W. Va., May 21, 1929.

From the University of Kansas School of Medicine.

examination of the literature and the clinical study of eight patients, two of whom came to autopsy.

I shall not read the detailed histories of these patients, with their numerous observations on excretion of fluids, extensive blood chemical studies and frequent metabolic determinations, but shall take up the important clinical and laboratory features stressed by writers describing this condition.

Clinically, all of these patients presented the picture which Osler described so graphically in the first edition of his textbook. The dropsy was a marked and obstinate feature, the urine was scanty and contained very large amounts of albumin. The blood-pressure was normal, although in two patients it gradually rose and in one patient became quite high before death. These two patients probably belonged to the group described as chronic nephrosis with a superimposed glomerular nephritis. One of these patients died and an autopsy was refused; the other is still alive, but growing progressively worse with a gradually increasing blood-pressure and nitrogen retention.

Since, however, it is mainly upon the data obtained from the laboratory that the diagnosis of chronic nephrosis is made, a careful examination of the validity of such criteria is obviously necessary. If lipoid nephrosis is a definite clinical entity, the diagnosis of which can be made on certain laboratory findings, then it should seem fair to insist that these findings be distinctive of the disease in question.

The first characteristic finding in a lipoid nephrosis as emphasized by Epstein is an increase in the blood cholesterol or hypercholesterinemia. This hypercholesterinemia has been the subject of particular study by Campbell and, later, by Maxwell. Campbell concludes that cholesterol is likely to be increased in cases of chronic parenchymatous nephritis and chronic interstitial nephritis, especially the former, and that it often decreases as uremia develops. In all cases of chronic parenchymatous nephritis with normal blood-pressure and edema, and in chronic nephritis with hypertension and edema, and in all cases of acute nephritis with edema, Maxwell[1] found a marked hypercholesterinemia. All of Maxwell's cases of chronic interstitial nephritis showed normal cholesterol values, his cases of primary arteriosclerosis showed high values, and one-half of his cases of hyperpiesia showed a hypercholesterinemia.

Maxwell concludes that "renal edema is almost invariably associated with an increase in the plasma cholesterol. . . The cholesterol figures fall as the edema appears. This phenomenon is seen most clearly in cases of acute nephritis."

An examination of our own cases of chronic glomerular nephritis, of chronic parenchymatous nephritis and of acute nephritis, bears out in general the contention of Campbell and Maxwell that there is a close relationship between hypercholesterinemia and edema. If, however, we attempt to stress this relationship too much, to push it so far as to conclude that hypercholesterinemia produces edema, we at once get into difficulties. In cases of chronic glomerular nephritis we not infrequently see patients with a marked edema and no hypercholesterinemia. Patient H. S. N., 25,869, who showed at autopsy a typical chronic glomerular nephritis and had a marked edema, showed a blood cholesterol of only 120, a normal value, although the blood urea on the same specimen was 88. The same was true of R. M. C., 26,530, who presented one of the most marked edemas we have seen during the past year and had a blood cholesterol of only 91, with a blood creatinin of 2.7. Of course, the objection may be urged that in these cases the edema was due to circulatory failure following the long-continued hypertension, but such observations emphasize the danger of ascribing an edema in kidney disease to hypercholesterinemia alone.

When we look at the other side of this problem and assert that hypercholesterinemia produces or should produce edema, we find the difficulties still greater. Diabetics often show a marked hypercholesterinemia without an evidence of edema. We had recently, in the hospital, a young diabetic patient of 22 who had a blood cholesterol of 300 and no edema, and we have many such records in our files. A high blood cholesterol is often seen in patients suffering from gallstones. Patients suffering from essential hypertension, the hyperpiesia of Allbutt, commonly show a hypercholesterinemia—71% in Westphal's series,[2] 50% in Maxwell's series, and about 40% in our own series; yet these patients, as a rule, show no edema or at most a slight edema.

This subject could be discussed at great length, but it suffices here to stress that a marked edema in kidney disease may be accompanied by no hypercholesterinemia and that a marked hypercholesterinemia may occur without edema. Also, it must be emphasized that a hypercholesterinemia appears in patients who show clinically the disease picture of a chronic glomerular nephritis, a diagnosis confirmed at autopsy.

The second criterion established by Epstein for

the diagnosis of chronic nephrosis is a lowered metabolic rate. We know, of course, that a marked lowering in metabolic rate is found in myxedema and that these patients usually present no evidence of renal disease. The subject of the basal metabolism in renal disease has been recently studied by Sterling-Okuniewski and Wegierko[3] at the Medical Clinic of Warsaw. These authors, after reviewing the literature in which they found little uniformity in results, state that they found in their investigations "no close relationship between the anatomical and functional injuries of the kidney and the basal metabolic rate." They conclude that "the study of the basal metabolism in diseases of the kidney has little diagnostic value, but gives certain indications for treatment." Aub and du Bois[4] found that, in general, nephritis with edema is accompanied by a reduction in metabolic rate, and they remark that "one naturally expects an organism diluted by inert fluid to show a diminished metabolism according to body weight."

Our experience is in accord with these conclusions. In one patient, for instance, who showed at autopsy a typical "large, white kidney" described so many years ago by Wilks, we obtained a metabolic rate of —21. These findings, I feel, allow us to conclude that a lowered metabolic rate in kidney disease is not characteristic of chronic nephrosis.

The third criterion of Epstein is that there is a change in the relationship of serum albumin to serum globulin—the globulin being relatively increased and the albumin diminished. This is certainly a most interesting observation of Epstein's, and probably is a part of the mechanism that explains the enormous loss of albumin seen in these patients. But is it a sufficiently characteristic finding to give it great importance in differential diagnosis?

This finding has been frequently obtained in patients described as typical examples of chronic nephrosis and was present in our cases. In two patients, however, presenting the picture of a glomerular nephritis with acute exacerbations it was also present, and in the patient referred to above, who showed large, white kidneys at autopsy and was diagnosed pathologically as chronic parenchymatous nephritis, the ratio of serum albumin to serum globulin was 1:5 instead of the normal, 5:3.

In summary, then, we have not found cholesterinemia, lowered metabolic rate or change in the serum albumin-globulin ratio a safe differential diagnostic criterion—either singly or associated. The patient with the large, white kidney at autopsy showed, during life, all these supposed characteristic findings.

The presence of a lowered metabolic rate, which is so commonly encountered in these patients, suggested early to the students of this disease that we were here dealing with a metabolic disease, the probable result of a thyroid deficiency. This suggestion has been stressed particularly by Epstein, who has recorded a case of chronic nephrosis which subsequently developed myxedemia and has stressed the value of thyroid therapy in these patients. Epstein, however, himself admits that "there is no evidence to show that the thyroid gland is diseased in chronic nephrosis or that its function is abnormal," although he proceeds in the same article to plead for the importance of the thyroid in the disease by pointing out the relatively enormous tolerance these patients have for thyroid extract.

It would not seem an unfair position to insist that if this disease is due simply to a thyroid deficiency, the administration of thyroid extract should relieve it promptly and effectively, as it does in ymxedema. Such is not the case. None of our cases were strikingly relieved by thyroid therapy, although in all cases the patients received enough thyroid to raise their metabolic rates to normal or above. Incidentally, in our series, the most striking improvements in the clinical condition of the patients followed the use of typhoid vaccine—non-specific protein therapy —with a resulting chill and febrile reaction.

Many other observers have described similar failures. Lewis and Scriver,[5] for instance, described a patient with a pure nephrosis who showed no improvement following thyroid medication, but showed a marked improvement, practically a clearing up of the edema, following parathyroid medication. Why not claim that this case was due to a parathyroid deficiency, since parathormone cleared it up? Warfield and Murphy[6] have reported four cases of nephrosis; in three of these thyroid therapy produced no improvement; in one, its effect was doubtful.

There are, however, many reports in the literature, especially from Epstein,[7] regarding its efficacy. This does not prove necessarily that a hypothyroidism is the cause of this disease, since other totally different kinds of therapy are often equally or more efficacious. Keith[8] has described a patient who was kept in excellent condition for a year with such diuretics as calcium chloride and ammonium chloride. Felber[9] describes a case cured with bismuth (bismogenol), given on the suspicion that the patient

might have had syphilis, although the Wasserman was negative.

We must also remember that, long before this discussion even arose, many cases of edema of both nephritic and cardiac origin were benefited by thyroid therapy. Diabolla and von Illyes,[10] as far back as 1897 (30 years ago), described an increased diuresis and an increased excretion of urea in chronic Bright's disease, following thyroid therapy. Percy, in 1912,[11] and again in 1913,[12] described good results from the treatment with thyroid extract in chronic nephritis with and without hypertension. Percy's observations, incidentally, preceded those of both Eppinger and Epstein, and Percy recommended large doses of thyroid extract—30 to 40 grains daily. Percy's description of the patients treated leaves no doubt that he was dealing in many patients with chronic glomerular nephritis. Phillips[13] has reported similar results.

I feel that all the evidence points to the conclusion that a primary hypothyroidism is not the underlying cause of this disease, and that for the lowered metabolic rate we must seek another explanation.

When we consider the infectious theory of the origin of this condition we are, I believe, treading firmer ground. Seven of our eight cases had evidences of chronic infection, one had apical abscesses, one had tuberculosis of the spine, one had a chronic mastoid disease, three had a pyelitis, and one followed pregnancy. The rôle of chronic infections in children with this disease is particularly striking. Clausen[14] reports eleven cases in children, all of whom showed a nasal sinusitis, four of the patients recovering completely following drainage of the sinuses. Aldrich[15] has reported seven patients with nephrosis, all showing nasal infections, with three cures. In his patients, operations upon the antrums were followed by a striking diuresis and disappearance of the edema. "All three of the permanently cured patients became well immediately on recovery from acute febrile infections complicating the nephrosis."

In the German literature we find the cases of Fanconi[16] and Eckstein,[17] in each of which there was a pneumococcic peritonitis and both of which recovered completely following drainage of the peritoneum. Munk[18] and others have described cases apparently of syphilitic origin.

While we must admit that chronic infections have not been demonstrated in all adult cases, yet they have been shown to exist in many adult cases and, in an overwhelming majority of the cases, in children. The etiological rôle of infections in certain cases has been proved in a clear and convincing manner.

The pathological picture presented by chronic nephrosis has been the subject of extensive studies and even more extensive arguments. Most of the cases seen at autopsy are of the so-called mixed type—chronic glomerular nephritis with nephrosis—but many cases of so-called nephrosis have been described.

What do we mean by *nephrosis*? The term, it will be recalled, was first introduced by Friedrich Müller, who sought thereby to describe, with the term *nephrosis*, a degeneration as contrasted with *nephritis*, an inflammation. Many pathologists accept this distinction, others do not. British pathologists, particularly, insist that a degeneration may, after all, be the first stage of an inflammation, and therefore such a distinction falls to the ground. A simple experiment illustrates this point of view. If we apply a strong solution of carbolic acid to the skin, we produce a destruction of tissue, a necrosis. This necrosis, however, is soon followed by exudation and the typical picture of an inflammation. In such an experiment, necrosis is immediately followed by inflammation and it would seem quite as logical to consider the whole process as one instead of attempting to separate it into two processes.

Such a degenerative change in the kidneys takes place mainly in the tubules, so that what one calls a *nephrosis* the other terms a *tubular nephritis*. In a tubular nephritis, which can be readily produced experimentally and is often seen in its acute stages clinically, fatty degeneration is often marked. When this fatty change is extreme, the kidney presents the picture long known to pathologists as the "myelin kidney," which seems identical with most, if not all, kidneys seen in lipoid nephrosis.

It seems to me, then, that the so-called lipoid kidney is an example of a tubular nephritis, or, if we call it by its more venerable name, a parenchymatous nephritis with a marked fatty degeneration.

With the contention of Epstein and others that a chronic nephrosis is not only a kidney disease but a more general affection of several organs or of a physiochemical system with a marked disturbance in lipoid metabolism, I am in perfect accord. The edema, for instance, is not a purely renal affair—perhaps not renal at all in origin.

The same, however, is true of other types of what we term kidney diseases. Acute nephritis, we now know, is not merely a kidney disease. In acute

nephritis many capillaries of the body are involved, but those of the glomerulus of the kidney speak loudest, as it were, because of the delicate structure involved, and we have a bloody urine or a total suppression of urine. Kylin particularly stresses this general capillary and arteriolar involvement and has proposed that, instead of glomerular nephritis, we employ the term *capillaropathia universalis acuta.* Such a conception explains some cases which at first seem baffling because a rise in blood-pressure occurs before any abnormality of the urine appears. The arteriosclerotic kidney, which may cause death, is but part of a generalized arteriosclerosis. In chronic glomerular nephritis we have involvement of the entire vascular system, as shown by the lesions in the retina which so commonly are the first indication of the patient's serious condition.

Is chronic nephrosis a disease entity? From the viewpoint of the pathological anatomist it is probably nothing other than our old acquaintance, a pure parenchymatous nephritis or tubular nephritis with a marked fatty degeneration of the kidneys. From the standpoint of the pathological physiologist it is a generalized disturbance of lipoid metabolism. From the viewpoint of the clinician it is a combination of the two—a tubular nephritis with an unusual disturbance of lipoid metabolism. The tubules of the kidney are a less highly specialized tissue than the glomeruli. Their regeneration is more easily accomplished. They can be diseased without any extensive involvement, either local or generalized, of the capillaries and arterioles, which involvement produces hypertension and cardiac hypertrophy. As a result, the prognosis in tubular disease is better than in chronic glomerular nephritis.

Many clinicians and pathologists have decried the use of the term *nephrosis* as cluttering up our terminology. If we understand what we mean by the term, its employment, it seems to me, is justified, when we remember that a pure nephrosis is, in the older terminology, a pure tubular nephritis and a chronic glomerular nephritis with nephrosis is a diffuse chronic nephritis in which both glomeruli and tubules are involved. The employment, however, of such terms as *diabetes albuminurica*, however, is open to serious objections. If we use this term to stress the great loss of albumin, it has some justification; but to employ it as a term of diagnosis would seem unwarranted in the present state of our knowledge. The nomenclature of disease should rest more upon etiology and pathology than upon isolated clinical findings. Patients showing a great loss of albumin with a change in the serum-albumin and serum-globulin ratio of the blood may show, at autopsy, a chronic diffuse nephritis.

In the treatment of these patients who are losing a large amount of albumin, unquestionably a high protein diet often brings improvement. Sometimes it does not, particularly when glomerular changes have occurred. The most sensible advice on this matter would be that given by John Hunter to his pupil, Jenner: "Don't think; try. Be patient; be accurate."

Thyroid extract often brings improvement and should be given a thorough trial, the dose being pushed until the metabolic rate of the patient is increased. Non-specific protein therapy has, in our hands, given the best therapeutic results. Diuretics, both alkaline and acid, or some of the heavy metal diuretics such as novazurol, may be tried. The results here are usually disappointing, but occasionally are very brilliant. Fortunately, perhaps, for the therapeutist, these patients are usually under treatment for a long time, and he has abundant opportunity to employ many different kinds of weapons from his armamentarium.

Focal infections should be cleared up. At times, particularly in children, such therapy produces spectacular results. If syphilis is present or strongly suspected, vigorous antisyphilitic treatment should be instituted.

From my own experience, as well as from the literature, I conclude that the prognosis in parenchymatous nephritis, tubular nephritis or nephrosis (take your choice of terms) is not particularly good. Six of our eight patients have died. But, as Osler observed thirty-seven years ago, recovery may take place in children, and it occurs (though apparently less frequently) in adults. Whether we are willing to accept Epstein's ideas or not, we owe him a debt of gratitude in pointing out that chronic Bright's disease is not always a grim drama that we watch with interest but are powerless to influence, and that there are certain patients still labeled as such who have no glomerular involvement, can be influenced by treatment, and that a certain per cent do actually recover.

REFERENCES

1. Maxwell, James: The Blood Cholesterol in Nephritis. *Quart. J. Med.*, 1928, XXI, 297.

2. Westphal, Karl: Cholesterin als tonogene Substanz der genuinen Hypertension im Zusammenspiel mit anderen Entstehungsbedingungen. *Ztschr. f. klin. Med.*, 1925, CI, 584.

3. St. Sterling-Okuniewski, and Wegierko, J.: Le metabolisme basal et les maladies du rein. *Paris med.*, 1927, XVII, 196.

4. Aub, Joseph C., and DuBois, Eugene F.: The Respiratory Metabolism in Nephritis. *Arch. Int. Med.*, 1917, XIX, 865.

5. Lewis, D. S., and Scriver, W. de M.: The Response of Chronic Nephrosis to Parathyroid and Thyroid Medication. *Ann. Int. Med.*, 1928, II, 66.

6. Warfield, Louis M., and Murphy, Francis D.: Lipoid Nephrosis. *Tr. A. Am. Physicians*, 1926, XLI, 82.

7. Epstein, A. A.: Thyroid Therapy in Chronic Nephrosis. *J. A. M. A.*, 1926, LXXXVII, 913.

8. Keith, N. M.: Discussion on Epstein's Paper. *J. A. M. A.*, 1926, LXXXVII, 918.

9. Felber, Ernst: Heilung der genuinen Lipoidnephrose. *Wien. klin. Wchnschr.*, 1928, XLI, 27.

10. Diabolla, G., and Von Illyes: Stoffwechseluntersuchungen an Brightikern unter Schilddruseneinwirkung. *Arch. f. exper. Path. und Pharmakol.*, 1897, XXXIX, 273.

11. Percy, J. F.: Thyroid Extract in Nephritis. *J. A. M. A.*, 1912, LIX, 1708.

12. Percy, J. F.: Thyroid Extract in Nephritis. *J. A. M. A.*, 1913, LXI, 380.

13. Phillips, Cadis: The Treatment of Nephritis. *Boston Med. and Surg. J.*, 1916, CLXXIV, 73.

14. Clausen, S. W.: Parenchymatous Nephritis. *Am. J. Dis. Child.*, 1925, XXIX, 587.

15. Aldrich, C.A.: The Treatment of Nephrosis. *Am. J. Dis. Child.*, 1926, XXXII, 163.

16. Fanconi, G.: Zur Oedemfrage und idiopathisches Oedem. *Jahrb. f. Kinderh.*, 1925, CX, 12.

17. Eckstein, A.: Zur Klinik der "Lipoidnephrose" im Kindesalter. *Klin. Wchnschr.*, 1926, V, 1787.

18. Munk, Fritz: Nierenerkrankungen. *II Aufl. Berlin Urban und Schwarzenberg*, 1925.

19. Kylin, Eskil: Die Hypertoniekrankheiten. Berlin, Springer, 1926.

THE SURGICAL MANAGEMENT OF GOITER *

By ROBERT KING BUFORD, M.D., F.A.C.S.
Charleston, W. Va.

A country doctor practicing at Bath, in the year of 1786, wrote an account of eight cases of "enlargement of the thyroid gland in connection with enlargement and palpitation of the heart." In the first cases reported, exophthalmos was a part of this clinical syndrome. That he did not think these observations of sufficient importance to publish now seems rather significant, for when a little paper came out in London, entitled "Collections from the Posthumous Writings of the Late Caleb Hillier Parry," the medical profession read for the first time a record of the symptoms arising from hyperthyroidism. In 1835, Sir Robert Graves described the cases of four patients suffering from palpitation, rapid pulse, nervous symptoms, over-prominent eyes and enlargement of the thyroid gland which seemed due to hypertrophy and thus to differentiate this condition from simple goiter. In 1840 the same syndrome was described by Basèdow, and later, in 1859, by Charcot, who originated the term *goiter exophthalmique.*

In England, the name of Graves, and in all German-speaking countries, that of Basèdow, have become associated with the clinical syndrome of all cases of overactivity of the thyroid gland. Exophthalmic goiter, the English translation of the French term *goiter exophthalmique*, was unfortunately adapted in America. The eye-signs of hyperthyroidism have been emphasized to the extent that many physicians wait until exophthalmos develops before making a diagnosis, overlooking the early symptoms of hyperthyroidism when treatment could be instituted with practically no mortality and the elimination of residual symptoms often seen in neglected cases following operation.

Classification.—The most confusing complex and difficult phase of the goiter problem, to the general practitioner, has been classification. Almost every man giving special attention to goiter has a classification of his own. No classification at present meets the ideal requirement of the clinician, the surgeon and the pathologist. The classification of pathological changes in the thyroid gland in the absence of any known etiological factor must be strictly referable to the physiological and anatomical bases manifest in the normal gland, and should not be obscured by the introduction of any clinical or theoretical consideration.

I have come to feel that the different types are related. I believe pathological evidence is tending to bear this out, and that it will ultimately be found that the differences are truly in degree. Basing our conception of thyroid diseases, therefore, on the physiology, chemistry and pathology of the gland, we have come to the following clinical classifications:

1. Colloid goiter.
2. Adenoma, or nodular goiter.
3. Hyperthyroidism.
   a. Graves' disease, primary.
   b. Adenoma or nodular, secondary.

Clinical Varieties.—The colloid goiter, the simplest example of which is the goiter of adolescence, is a work hypertrophy and disappears without treatment or with iodine by the twenty-fifth year in this country. Colloid goiter frequently involutes into nodular or adenomatous goiters. It will not disappear of its own accord or under the influence of iodine. Nodular goiters are activated by some unknown stimulus and develop hyperthyroidism when they are between 35 and 40.

The adenoma with hyperthyroidism presents the tremor and the tachycardia just as in Graves' disease, and also the loss of weight and strength. Graves' disease seems to expend itself upon the nerv-

---

* Read before the Central West Virginia Medical Society at Webster Springs, W. Va., on July 18, 1928.

From the Thyroid Clinic of the Charleston General Hospital.

ous and muscular systems in the brief time of one or two years. Nodular goiters are frequently present 15 years before structural heart changes occur. Loss of weight, palpitation, tachycardia, fatigue and dyspnea are the first symptoms noticed by the patient in this type of goiter.

Graves' disease comes at a younger age, 30 to 35, and reaches the maximum of its first severity at or about the end of the first year. One out of every five adenomas develops the toxic symptoms of hyperthyroidism. Judd found that even after the hyperthyroidism developed an average of two and one-half years of symptoms elapsed before operation.

Treatment of Hyperthyroidism.—The greatest problem in the treatment of hyperthyroidism is the estimation of the degree of toxicity that exists in a given case. Clinical symptoms gives us many valuable signs of thyroid toxemia and disturbed metabolism. Basal metabolism gives an accurate index in goiter as the white and differential blood count in appendicitis, urinalysis, and blood sugar in diabetes. We are now able to state the degree of toxicity in figures and show how much improvement has been accomplished by treatment or operation. The basal metabolic rate is of great value in hyperthyroidism, as it is distinctly a disease of hypermetabolism. It is much more dependable than the blood sugar curve or the adrenalin test. It helps to separate neurasthenia, cardiac neurosis, effort syndrome, and neurologic states which so often simulate hyperthyroidism from true toxemia in that the rates of these conditions are normal.

The surgical treatment of mild cases of hyperthyroidism is most gratifying. The severe cases test one's knowledge to its capacity and one has to use great care and judgment, with practically every expedient to get them to a point where it is possible to do any surgical procedure. Every agent that can possibly be brought into play should be used in nursing these patients back to health.

It is not always realized in the purely medical treatment of toxic goiters that we are dealing with an intense intoxication which is being disseminated throughout the entire body in all of the organs and all of the tissues setting up secondary pathological changes that may be severe and sometimes permanent, and are often fatal. The toxicity seems to expend itself upon the myocardium, the cerebrum, and the nervous system. The muscular system is very greatly affected, as manifested by the extreme weakness, and the entire body mechanism is so interfered with that great emaciation often occurs. When the nervous system is involved in an organic way, the functions of the stomach and intestinal canal are so altered that vomiting and diarrhea are very grave indices of an advancing and threatening toxemia, sometimes fatal. The myocardium is perhaps one of the earliest structures to suffer, and certainly the most unfortunate.

Cerebral irritation is often manifested by peculiarities and vagaries that are quite unlike the usual calm of the individual. The disposition often becomes irritable. Surgery is prophylactic in hyperthyroidism and should be instituted at the earliest possible moment in order to curtail the disastrous effect upon the various organs, structures and functions of the body. It becomes a game in which our results are measured by the skill and judgment of the operator. It must be remembered that an operation is not an emergency measure in hyperthyroidism. The rapidity of operation and avoidance of unnecessary trauma as a result of great delicacy and swiftness of touch are the desiderata. The hardest thing to learn is not to do too much and have the courage to stop operating when alarming symptoms occur during the operation. A technique so developed and perfected that no delay is encountered in a rapid closure as packing of the wound will often save a fatality. The operation is stopped the moment we have any fear of the outcome. We all can recall very mortifying experiences because we thought we could get by.

Use of Lugol's Solution.—I have adopted the routine practice of using Lugol's solution both before and after operation in cases of hyperthyroidism. While iodine gives only temporary benefit in hyperthyroidism and possesses the very great advantage of allowing the surgeon to operate exactly at the time when the patient is enjoying a remission from the disease.

I now believe that it is to this type of preparation, and a careful technique involving the absolute minimum of surgical trauma, that the low mortality rates encountered in the larger surgical clinics during the last few years are due.

In a recent communication I offered an explanation for the temporary benefit following the use of Lugol's solution in cases of toxic goiter. The fall in metabolism might be dependent upon the well-known involuting effect of iodine on hyperplasia. Iodine administration causes rapid storage both of iodine and colloid in the follicles and a rapid involution of the hyperplasia. The stretching or distention of the follicles with colloid causes practical

occlusion of the perifollicular capularies and lymphatics and a pressure retention which temporarily blocks excretion until the thyroid cells have accommodated themselves to the increased pressure and until the vascular capacity of the perifollicular capularies is restored.

Iodine by mouth will produce abrupt remission in most cases of hyperthyroidism. It has been shown that this agency will not control the disease permanently, and in some cases it gives no discernible effect. After the administration of iodine is stopped, when it is given in the first cycle, a rapid rise of basal metabolic rate with toxic symptoms will often appear in one or two weeks. However, the period of improvement attained has been of sufficient length to afford opportunity for the necessary surgical work and at a greatly reduced risk, although it should be borne in mind that the influence of iodine is restricted in its scope and the danger of doing great damage through its use should be appreciated. Many cases of inactive adenomata have undoubtedly been activated by the administration of iodine and the widespread popularity of iodized salt is not without its possibilities for harm.

The results following the use of Lugol's solution in hyperthyroidism are as striking as those formerly obtained following the ligation of the superior pole —a procedure which is occasionally still to be employed. In this connection emphasis should be placed upon ligation of the entire structure, artery, vein, nerve and lymphatics, for the ligation of the artery only shuts off the blood supply to the gland through that particular vessel, while the additional ligation of the vein, nerve and lymphatics presents the return of venous blood by that route, blocks the nerve impulse and closes one of the portals of the lymphatic outlet.

I have performed 772 operations upon the thyroid gland during the last thirteen years; 212 ligations and 560 thyroidectomies, of which 200 were for Graves' disease, 226 adenomas with hyperthyroidism, 116 adenomas or nodular goiters, and 18 colloid goiters. There were seven deaths in this series—a mortality of less than one per cent.

The causes of death were as follows: Two ligations, one lobectomy, and two subtotal thyroidectomies for exophthalmic goiter, all dying from post-operative hyperthyroidism. Pulmonary embolism was the cause of death of one patient, seventy years of age. A subtotal thyroidectomy was done for adenoma with hyperthyroidism, complicated by endocarditis. Pulmonary edema and respiratory failure were the cause of death in one case each. A subtotal thyroidectomy was performed for adenoma with hyperthyroidism. The recurrent laryngeal nerve was injured during the ligation of an inferior thyroid artery. Subsequent operation disclosed the nerve injury was due to scar-tissue formation and the abductor paralysis was cured with return of voice in two and one-half months after release of nerve.

Infection occurred in three cases. The wound was reopened and the bleeding vessel ligated in one case of post-operative hemorrhage. Bronchopneumonia was recorded in two cases.

We have not had a fatal post-operative crisis since we have been preparing our cases with Lugol's solution, except in those patients who had been taking iodine for a long period of time and had multiple operative procedures for extraction of teeth, and tonsillectomies.

SUMMARY

Cases of hyperthyroidism before operation may be divided into three groups: (1) uncomplicated cases; (2) those with cardiac decompensation, and (3) those with extreme toxicity manifested by nausea, diarrhea, and delirium. (Bunts.)

Densmore has emphasized the principal conditions which contribute to the risk attending hyperthyroidism: (1) Marked loss of weight within a short period of time; (2) myocardial changes; (3) dehydration and impending acidosis, and (4) instability of the nervous system. Each of these conditions in itself suggests the method of rehabilitation to be employed.

Pemberton has pointed out that, except as to the fundamental principle involved, there can be no standardization of the preoperative preparation. Of patients with hyperthyroidism, the method must be adapted to the individual patient.

Iodine, rest, and a high caloric diet are necessary for all patients. I find rest in bed in the hospital essential for the preoperative care of hyperthyroidism, and by such treatment the condition of the patient is greatly improved. Hospitalization may be necessary from a few days to several weeks. During this period, heart and kidney function and the nervous stability of the patient are carefully evaluated. The result of this observation, combined with study of basal metabolic rate, gives us a fairly accurate index of the degree of intoxication.

The patients with milder symptoms are not placed in the hospital until they are ready for operation. Depending upon the severity of the hyperthyroidism, the more toxic cases are kept in bed from eight days

to one month. We find that even these severe cases do better when they are permitted to be up and around the room.

All patients are given 1 c.c. of Lugol's solution in grape juice every four hours, from five to twelve days. The maximum improvement from iodine apparently is obtained around the eighth day.

Patients admitted to the hospital in a crisis are given large doses of Lugol's solution, sometimes ten to twelve cubic centimeters in 24 hours. Sodium iodide, five-tenths to one gram, with 1,000 c.c. of 5% glucose and 25 units of insulin, has proved to be the most effective method of handling these acute hyperthyroid storms.

In the thyro-cardiac group that has auricular fibrillation, digitalis is given until physiological results are obtained. A local anesthesia, reinforced with nitrous oxide, oxygen or ethylene, is the best and safest anesthesia for thyroid operations. Basal metabolism estimations indicate more accurately the activity of the gland, while the clinical manifestations indicate the resistance of the patient.

Ligation of one or more of the thyroid arteries preliminary to thyroidectomy has been greatly reduced since the introduction of Lugol's solution in the preoperative treatment of hyperthyroidism. The period in the hospital varies from a few days to several weeks. The operation should not be done until there is a well-marked drop in the pulse rate, nervousness, and metabolic rate.

The most common complications which may result from thyroid surgery are injury to the recurrent laryngeal nerve, hemorrhage, acute hyperthyroidism, and cardiac failure.

A thorough knowledge of the anatomy of the neck and the performance of an anatomical operation, leaving a small portion of each lobe over the posteria capsule, will prevent injury to the recurrent laryngeal nerve.

Hemorrhage is controlled by ligating each vessel separately, avoiding mass suture, and the elimination of drainage whenever possible.

Cardiac failure should be prevented by better selection and preoperative care. We give digitalis only to those patients showing definite structural heart changes.

Acute hyperthyroidism is controlled by the preliminary administration of Lugol's solution, except in cases that have chronic hyperthyroidism due to indiscriminate and prolonged use of iodine. When the patient is returned to bed, 500 c.c. of normal saline, 3 gm. sodium bromide, 3 gm. chloral hydrate, and 12 c.c. Lugol's solution are given by rectum, and 1,000 c.c. of a five per cent glucose, 25 units of insulin, and 1 gm. of sodium iodide are administered intravenously. Ten minims of Lugol's solution are given orally every thirty minutes for twenty doses, then 30 minims are given every four hours for 72 hours. After this period, ten drops are given daily for two months. Nervousness and restlessness are controlled with morphine and luminal.

Patients are permitted to sit up on the side of bed on the third day, in a chair the fourth, and are permitted to go home on the fifth.

Before the patient is discharged, all signs of possible infection in tonsils, sinus and teeth should be looked into and foci of infection corrected after they are found.

The extraction of teeth and removal of tonsils during thyroid overactivity has a fixed mortality, and the patients that recover have irreparable damage done to their nervous systems, consequently making them poor surgical risks. A number of physicians have advocated and practiced the removal of foci of infection with the hope of alleviating or curing hyperthyroidism.

During my early goiter work, I tried this popular procedure until we had a few near-mortalities. I began to investigate this experience in our larger goiter clinics, and found that they had changed their procedures and were preparing the patients for operation and removing infected teeth and tonsils after operation, when the patients are in better condition. A minor operative procedure such as a simple extraction will sometimes prove fatal in a severe case of hyperthyroidism, which can be eliminated by relieving the victim of the heavy load of toxemia by removing a part of the oversecreting gland. It is essential to eradicate all foci of infection after thyroid operation to prevent hypertrophy and hyperplasia of the remaining thyroid tissue and a probable recurrence of hyperthyroidism.

I consider the establishment of the patient's confidence very essential in the successful treatment of hyperthyroidism. This is obtained by frankly outlining to them the plan of management and encouraging them to visit with patients who are convalescing and pleased with their results. "After all, it is the confidence the patient has in the surgeon that is the big factor. The next most important is the confidence born of experience that the surgeon has in himself." (Hertzler.)

A trained personnel is at all times essential to the good work of the surgeon in the treatment of

LIBRARY OF THE COLLEGE OF PHYSICIANS

hyperthyroidism it is absolutely imperative. A highly developed knowledge of the clinical and metabolic changes dependent upon the excessive thyroid secretion is absolutely essential for a successful management.

I conclusion, I can not do better than quote H. Lebert in the end of his practice to his classical treatise on goiter which appeared in 1862: "New researches, new discoveries, new points appear daily. The purpose of any specific piece of work can only be to contribute something which is calculated to perfect our ideas on some limited field of knowledge." This truth has gained in force with the passing of time.

THE RADIAL PULSE *

By MILTON C. BORMAN, M.D.
Montgomery, W. Va.

An examination of a hospital patient's record today is likely to reveal the physician's increasing reliance upon laboratory procedures and mechanical instruments of precision in determining the etiology and prognosis of disease, and the degree and rate of progress under treatment. There are many pitfalls inherent in such a state of affairs, the most important of which is the gradually decreasing reliance placed upon history-taking and physical diagnosis. This is indeed unfortunate, because it places a premium upon physical equipment in the physician's office and minimizes mental equipment. When the family physician approaches a medical problem it is, in the vast majority of cases, without the aid of extensive diagnostic physical equipment. We should all listen well to the great family physician of Burnwell, who has probably contributed more to the science of cardiology than any other physician who has ever lived, because of his teaching exemplified daily in his practice of the diagnostic ability of the unaided senses. I do not wish to create the impression that I desire to belittle the value of instruments of precision or carefully performed and accurately interpreted laboratory procedures. They are frequently indispensable. They should be used wherever possible for their corroborative value in verifying facts previously determined with the unaided senses, or in supplying data which can not be obtained without their use. They should not be allowed, however, to replace effort which should be expended in obtaining a history or performing a physical examination. They should serve as supporting evidence. The diagnosis can nearly always be made without them. The data accumulated through them may cause us to alter our opinions, but they should not preclude other study.

With these things in mind, I wish to suggest tonight what the unaided senses can do when applied to a study of the radial pulse.

It is the common belief that when we palpate the arterial pulse we feel an alternate contraction and dilatation of the vessel. This is not true. What we really see is a displacement of the whole artery, and what we feel is the sudden increase of pressure within the artery. Broadbent says: "Such a pulsation can be felt on a large scale by placing the foot on the inelastic leather hose of a fire engine in action, in which there can be no expansion." [1]

We should recall, at the outset, that the radial pulse may be an expression of remote phenomena; *e.g.*, the increased rate in fevers, intoxications, central nervous instability, latent tuberculosis, or the decreased rate following a fever, in jaundice, and increased intracranial pressure due to head injury, brain tumor, meningitis, or brain abscess.

Careful inspection of the pulse may reveal old scars, a possible aneurysm, or some important abnormality. The radial artery may be very small, scarcely palpable, due to anomalous development; or it may not be palpable because of previous injury higher up in the forearm, or because of embolism, endarteritis obliterans, or malignant growth which by compression cuts off the pulsations. Both radial pulses should be palpated simultaneously. Rarely, asynchronicity will be detected, suggesting an aneurysm of the aortic arch, the subclavian or brachial artery.

The condition of the vessels themselves should be determined, the degree of tortuosity and beading being an index of the amount of peripheral arteriosclerosis. A more accurate estimate of the tortuosity and beading of the peripheral vessels may be obtained by palpating the brachial artery over the humerus. The brachial artery may be firmly compressed, cutting off the blood supply from above, thus eliminating the factor of intermittent pulsation and enabling palpation of a vessel emptied of blood.

Some clinicians have believed that they were able to determine approximately the arterial systolic blood pressure by palpation of the arterial pulse. By varying the degree of pressure exerted by the finger tips one notes the amount of pressure required to shut

---

* Read at Staff Conference, Coal Valley Hospital, Montgomery, West Virginia, April 9, 1929, and before the Tri-County Medical Society, Richwood, West Virginia, April 10, 1929.

off the pulse. Repeated experience with this procedure during several years of continuous observation convinced me of the high frequency of error when least expected, and I have therefore discarded this determination.

There are certain peculiarities of the pulse which may be noted by a watchful observer. The dicrotic quality of the pulse in typhoid fever is of diagnostic importance. I found this characteristic exhibited in the majority of thirty typhoid-fever patients. Mackenzie describes the impinging against the finger of the radial pulse in a slow, leisurely fashion, in aortic stenosis, in which the polygram may reveal a double wave at the top, the *pulsus bisferiens* of the older writers. The high, bounding pulse of pneumonia, the forceful pulse in hypertension, and the Corrigan or water-hammer pulse of aortic regurgitation are familiar to each of you. In adhesive mediastinitis the pulse may show a diminution in size during inspiration—the *pulsus paradoxus*. The volume of the pulse wave varies considerably; some waves "seem to roll up under the finger, passing gradually away, while others pass quickly, giving a mere flick to the finger." [2] The impact of the pulse wave may be quick and abrupt, the wave quickly disappearing, the *pulsus celer*, which I have noted in rheumatic valvulitis and believe is one of the early signs of probable aortic valvular involvement. The impact may approach the finger gradually and gradually subside, the *pulsus tardus*.

If I were to read a paper, as I have done in the past, on the clinical disorders of the heart-beat, with polygraph tracings and electrocardiograms illustrating the various types of cardiac arrhythmias, you might find the material somewhat dull. Instead, I wish to spend the remainder of my allotted time as a disciple of Sir James Mackenzie, who, during his later life, lamented the misinterpretation placed upon the mechanical methods of cardiac diagnosis which he had suggested. To a large extent, no attention was paid to his statement that these instruments were meant to verify his teaching, and that the diagnosis of each cardiac arrhythmia was possible in a vast majority of cases by simple palpation of the pulse and, in certain instances, with simultaneous auscultation over the precordium; that the value of the mechanical methods resided in their ability to explain and help interpret cardiac phenomena.

Nearly all children exhibit a curious pulse rhythm, a more or less regular waxing and waning synchronously with respiration. During inspiration the pulse slows, and during expiration the rate increases. Prior to the World War, large numbers of children exhibiting this normal phenomenon were classed as cardiac patients and doomed to a life of semi-invalidism. We now know that this is a harmless physiological arrhythmia without significance. There are four other kinds of sinus arrhythmia. The waxing and waning of the pulse may be independent of respiration, the change being spread over a period of ten or fifteen seconds. The pulsations cease for several seconds, and there is usually associated fainting. There may be an abrupt and marked slowing of the pulse waves to about 40 or 50 per minute, also associated with faintness or unconsciousness. During these attacks there is an independent lowering of the blood-pressure. This is considered by far the commonest cause of fainting attacks in men and women. Finally, there may be intervals between the pulse waves which are absolutely irregular without any definite rhythm form to the irregularity. There is usually an associated slowing of the pulse. It may be found in quite young and apparently healthy children, and is also found in patients who have rheumatic heart disease and who are under the influence of digitalis. All these alterations of pulse rhythm depend upon the alterations of the tone of the vagus nerves controlling the heart rhythm, and, except that form associated with syncope and unconsciousness, are harmless.

Occasionally, we find a patient whose pulse rate, though possessing normal rhythm, is very slow—the rate being between 30 and 40. A pulse rate of 35 or less is practically always due to heart-block, the result of serious cardiac damage. In this condition the rate is unaffected by exercise, atropin or amyl nitrite. Colored patients, especially after acute infections, have very slow pulse rates, which are, however, normal in all other respects. Partial heart-block may be detected by an occasional dropped pulsation in a pulse that is otherwise perfectly normal. The pulse rate may be suddenly halved during the time it is being palpated—an almost certain indication of the onset of heart-block.

Another abnormality of the pulse which will be detected in the aged, in certain normal adults, and in children or young adults with organic heart disease, is characterized by the occasional appearance of a pause longer than normal. By observing the phenomenon more closely, we will find that the interval just preceding the long pause is shorter than its preceding fellows; that is, the pulsation preceding the long pause is due to a premature, ineffectual contraction of the heart. This premature contraction

may be so weak that it is unable to produce a pulsation in the radial vessels, and we have an occasional long pause almost twice the length of the normal interval between pulsations. If this occurs very frequently there will be a marked slowing of the pulse rate so that it will simulate heart-block because of the few pulsations that are palpable at the wrist.

There are patients who complain of periods of sudden acceleration of the heart rate. By far the majority do not have a pulse rate of more than 140. They may have almost every type of subjective sensation. These attacks occur frequently, and a careful history and examination of the patient will show evidence of a nervous-system imbalance. Patients giving a somewhat similar history, or unconscious of any abnormality of cardiac action, may complain of a sudden sense of precordial discomfort or pain, or violent palpitation. They feel cold, perspire, complain of flatus and flatulence, salivation, nausea, and vomiting. There may be hemoptysis. Signs and symptoms of cardiac decompensation appear, followed by collapse, delirium, and, on occasion, death. As a rule, these attacks terminate as abruptly as they began. During the attacks the pulse rate is entirely unreliable. The pulsations are very weak, ineffectual, and extremely rapid, so that they can not be counted or even palpated. This may be a simple paroxysmal tachycardia. We must depend upon information other than that gained by simple palpation of the radial pulse to make our diagnosis. However, the pulse will direct our attention to the condition, and it is, therefore, of great value.

Patients may have persistent regular pulse rates of 130 to 160, unaffected by change of posture, exercise or rest. This condition may persist for a month or more. The patient becomes aware of it because of palpitation and sudden syncope. Suddenly, the rate may be doubled, which can not, of course, be detected except by auscultation or instrumental means, and frequently there is unconsciousness during the attack. To differentiate this condition from that just before described, auscultation revealing a ventricle beating regularly from 180 to 220 makes a diagnosis of simple paroxysmal tachycardia. Further, paroxysmal tachycardia does not last more than 14 days, whereas auricular flutter, the condition just described, may last for years. So, if we find a patient whose pulse rate is about 150 unaffected by effort, or if it falls to below 150 and becomes irregular, the patient has auricular flutter.

There is a condition (auricular fibrillation) which the older writers called "paralysis of the auricle"—a very good name, for it probably indicates, as near as we know, what has taken place. When the pulse is palpated in this condition, if the rate is moderately rapid, between 120 and 160 per minute, it will be found to be absolutely irregular. The volume of succeeding contractions will vary from each other, and the intervals separating successive pulsations never seem to be exactly the same. There is no dominant rhythm. This is one of the most easily detectable arrhythmias. When the pulse rate is slowed down to normal or practically so, the diagnosis becomes more difficult. Strict attention must be paid to the interval between successive contractions, for it has only minor variations in its length. When the rate is slow and difficult to recognize, exercise or the inhalation of an ampule of amyl nitrite will accelerate the rate, which, if the condition is auricular fibrillation, will create greater irregularity; whereas, if the condition is due to frequent premature beats, these so-called extrasystoles will drop out and the pulse will become more regular. Another useful test is the lack of respiratory control of the rate of the pulse. In every other type of arrhythmia, except auricular flutter, deep breathing will produce an acceleration of the pulse during inspiration and a slowing of the pulse during expiration. It may be noted that the stronger pulsations follow the longer pauses, or that there is no such relationship. Finally, other arrhythmias alternate with normal periods, whereas the condition of auricular fibrillation, once established, is likely to persist for years. It has been said that this condition is recognizable by the means suggested in over 90 per cent of the patients in whom it occurs.

There is a final arrhythmia, *pulsus alternans*, characterized by alternate strong and weaker pulsations dependent upon a regular alternation in the strength of succeeding cardiac contractions. When this is found with a normal or only slightly increased cardiac rate, it has grave significance. Unfortunately, this is detectable by the palpating finger on the arterial pulse in only a small number of cases. It can be detected always by the sphygmomanometer. It may be detected occasionally, however, without instrumental means, and its discovery then is the reward of effort. By gradually compressing the radial or brachial artery, exerting the same amount of pressure for several pulsations, increasing slightly the amount of pressure exerted, and again maintaining this new pressure, this process is continued until a degree of pressure is exerted which will cut off the alternate weaker pulsations but will

allow the stronger pulsations to be felt. This occurs at the height of the systolic pressure. In discussing its prognostic value, Lewis states that "it is the faint cry of an anguished and fast failing muscle, which, when it comes, all should strain to hear, for it is not long repeated. A few months, a few years at most, and the end comes." [3]

SUMMARY

The folly of replacing history-taking and carefully performed physical examinations with mechanical and laboratory procedures is discussed. The value of careful inspection and palpation of the radial arterial pulse in directing attention to remote phenomena of disease, and particularly to disease of the cardiovascular system, is considered. The ability to diagnose the various types of cardiac arrhythmias by inspection and palpation of the radial pulse is presented.

REFERENCES

1. Mackenzie, Sir James: Diseases of the Heart. 4th ed., p. 447.
2. *Ibid.*, p. 449.
3. Lewis, Sir Thomas: Clinical Disorders of the Heart Beat. 6th ed., p. 121.

THE DIAGNOSIS OF ACUTE AND CHRONIC GOUT *

By ALBERT H. HOGE, M.D., F.A.C.P.
Bluefield, W. Va.

There was a time in our history when it was quite a distinction and an honor to be afflicted with gout.

The present generation has been taught or allowed to believe that this was a disease of ancient history, confined to the wealthy and to those who lived in leisure, eating excessively and exercising little.

It is not unusual today to find physicians who deny the existence of gout in their patients, and rarely one finds a physician who examines, routinely, patients with rheumatic symptoms for this disease. Well-trained men often look upon gout as a curiosity rather than a clinical entity.

Hippocrates recognized gout in his day; 400 B.C. In his writings he states that an old person who has led a hard life and suffered from constipation is beyond the power to cure, while some types, mostly seen in spring and autumn, would clear up within forty days.

Other statements made by Hippocrates, that we may well consider, are as follows:

"Eunuchs did not have gout nor become bald."

"A woman did not have gout until her menses stopped."

"A young man did not have gout until he indulged in coition."

All the ancient writers claimed that venery was a great predisposing cause of gout.

I am well aware that, in some quarters, the diagnosis of this disease is made very lightly—notably in certain health resorts. The reverse, however, is usually true in private and hospital practice, notwithstanding the fact that a majority of these cases present a definite clinical picture after the diagnosis is considered.

This condition was forcibly brought to my attention about nine years ago by Dr. Charles Spencer Williamson's report and analysis of 116 cases occurring in his wards in Chicago.

Only 29 of these patients were admitted as having gout or suspected as having it, despite the fact that 65 of them had the diagnosis so plainly written that no possibility of error existed.

My reason for presenting such an uninteresting subject is to remind you that gout does exist today, and it is not confined to one of the large toes, as is the general belief, but is almost always polyarticular, especially after the initial attack.

Incidence.—The records of several of the larger hospitals in this country show about the same ratio as those in England.

Etiology.—Sex is, by far, the most striking factor. One rarely encounters a true case in a female. Age is another important factor. Cases rarely develop before 25 or after 60. Many patients will have attacks after 60, but a history can be obtained always to show the existence of symptoms before that age.

Nativity and Heredity.—In attempting to explain the apparent rarity of gout in the United States as compared with European countries, some interesting possibilities are encountered. In the first place, while the entiology of gout is obscure, certain factors play an undeniable part in the production of this disease, and, curiously enough, these factors are not wanting in the United States.

Certainly, both intrinsic and extrinsic factors must be involved in the etiology. Of the intrinsic, the factory of heredity is most salient. From father to son the seed of this condition is definitely transmitted and will bear fruit if the living conditions of the son are favorable to its growth.

In Europe, alcohol has assumed a rôle secondary to heredity in producing gout. In America, this does

---

* Read before the Section on Internal Medicine of the West Virginia State Medical Association at Martinsburg, W. Va., on May 22, 1929.

not hold true. Almost all of the patients studied in my practice were total abstainers from alcohol. Focal infections probably play no part in this; if they do, they are certainly secondary. Apparently, it is due to an inborn defect or alteration of protein or nucleoprotein metabolism. It is known that certain acute or chronic infections sometimes cause a degeneration of the thyroid gland; a vital organ in controlling metabolism. Certain chronic cases of gout will improve under thyroid therapy.

It seems clear, in the light of our present knowledge, that foods rich in purins cause attacks, in almost all instances, in persons predisposed to the disease. Overeating is always a factor in these cases. It is my belief that excess and indiscriminate eating that usually accompanies the free use of alcohol is far more important than the latter as a causative factor in this disease.

Of equal importance is constipation. The gouty are nearly all costive and suffer from the effects of it—an important fact to bear in mind in treating these cases.

Clinical History.—The onset is always acute, with intense pain in the joint or joints affected. Most attacks occur at night and may be confined to the great toe and ankle. The right toe is more frequently involved than the left, the ratio being about four to one. Several years may elapse between attacks, but there is always a tendency for one or more additional joints to be involved with each succeeding attack.

Many of these cases are so mild at first that the sufferers do not seek relief. Others do not consult a physician until several joints are affected. It becomes difficult to obtain a history of the first few attacks that possibly involved only the great toe. The physician, seeing these cases after several attacks, faces a picture of six or eight joints simultaneously involved. This accounts, probably, for the many times this disease is diagnosed as acute articular rheumatism.

It is remarkable how little elevation of temperature will be present in these cases—rarely will it exceed 100 degrees. This is of great diagnostic significance, since there are few clinical pictures in which six or more joints are greatly swollen and inflamed, the skin being red and tender, in which the patient suffers intensely with a normal or near-normal temperature. More than fifty per cent of these patients will be fifty years of age or older. A little consideration will show that acute articular rheumatism is improbable in a man of that age. (Gout usually appears at an age when rheumatism ceases.)

Inasmuch as these joints appear not unlike those of acute arthritis, certain factors must be present to enable one to make a differential diagnosis. In a joint, swollen and inflamed from arthritis, tenderness is very pronounced over any surface of that joint. In gout, the tenderness is more pronounced over the outer and inner surface, while there is comparatively little tenderness over the front and back parts of that joint.

This point, also, I consider of great diagnostic significance: A majority of patients develop attacks about 2 A.M., and will often improve during the day, having a recurrence at about the same hour the following night.

The one thing, however, that is necessary in diagnosing gout is the presence of tophi, referred to in the older literature as "chalk stones." They constitute the one and only definitely certain pathognomonic clinical sign of gout. They do not develop, as a rule, until the disease has existed for some time, but are usually found in the joints in long-standing cases. They are especially likely to develop in the cartilages of the ears; there they may be seen and felt, varying in size from a millet seed to a pea.

If a tophus in the ear is pricked and opened with a needle, the contents will be found hard and chalky. When examined under the microscope, they are seen to be typical sodium-biurate crystals and are pathognomonic of gout. It is usually possible to make a diagnosis of a tophus in the ear from the macroscopic appearance alone. It is safer, however, to remove the nodule and examine under the microscope, as it may be mistaken for a sebaceous cyst. The latter, when pricked, contains a soft, cheeselike material with oil globules.

The purpose in presenting this subject is to stress the necessity of looking critically at every joint case in middle-aged men for a possibility of the existence of gout.

My established rule is to examine carefully the cartilages of the ears for tophi in every joint case of an adult, and by so doing I have saved myself from extreme embarrassment and my patient from much suffering.

I recall distinctly a case seen about a year ago—a railroad conductor, only thirty-four years of age, whose attacks had begun about four years previously. During this period he had spent several months in

various hospitals and one month at Hot Springs. His teeth, tonsils, and appendix had been removed without benefit. A striking thing was his statement, saying that at times he would be entirely relieved of all symptoms, and again they would recur suddenly at night, continuing from two weeks to three months, the pain and swelling being confined to his feet, ankles, and knees. Several joints in his feet and both ears showed definite tophi.

The diagnosis of gout in his case was so obvious that an error in diagnosis was impossible. He has remained symptom-free for eleven months, diet control being the only treatment.

Treatment.—In conclusion, I will discuss the treatment. This discussion will be brief, because a complete line of treatment may be found in any modern textbook on medicine.

So far as is known, gout is due to an excess of purins in the body. Of first importance, then, is the selection of a diet which will maintain body weight. Obesity must be reduced, but slowly. Select a diet known to be low in purins, which should consist at first largely of cereals, milk, eggs, and bread. Fats of all kinds may be allowed if patient is not obese. Any fruits are permissible. It is generally assumed that vegetables are practically free of purins. Most of them are, but there are some very distinct exceptions; for instance, spinach contains the same purin value as ham. Lentils also have a high purin content. Peas and beans contain a considerable quantity. The legumes, however, are the chief offenders in this respect.

Those foods containing the highest purin value are calves' sweetbread, beef liver, beef kidney, tongue, and squabs. In general, all meats, game, and all sea foods are of high purin content, shellfish containing somewhat less than other meats.

A few words regarding the treatment of an acute attack. There is a drug of wonderful benefit in a majority of cases: cinchophen, better known by its trade name, atophan. In some cases, atophen works like a charm. Many drugs have been used as so-called acid solvents; none, though, have stood the test of experience, and to discuss them is superfluous.

While it is probably true that gout is never cured, one should not reach a pessimistic conclusion, because, if the disease is recognized early, appropriate treatment will not only lessen the number of attacks but also their severity; the result is most gratifying.

The frequency of gout in the United States is much greater than is generally believed. Errors in diagnosis are quite numerous. This is due to the erroneous assumption of its rarity, rather than to any great difficulty in recognizing the existence of the disease.

Discussion

DR. D. A. MACGREGOR (Wheeling): I would like to ask one question: Did Dr. Hoge purposely omit the mention of colchicin in the treatment, or aren't we as confident of its virtues as in the olden days?

DR. C. W. WADDELL (Fairmont): I would like to ask a question about the use of coffee and tea. I wonder whether they are not forbidden in Dr. Hoge's diet?

DR. A. H. HOGE (*closing the discussion*): In regard to colchicin, that is a drug that has been used for a great many years and is certainly of some value, but, because of the uncertain action and the fact that the varied potency of this drug as obtained today makes it very unreliable in treating these cases and the response to it is not comparable with that of atophan, I use the latter.

In answering Dr. Waddell, I stated that no attempt would be made to elaborate upon the treatment of this disease. A careful treatment can be found in any modern textbook, if a man is interested, and it is not necessary to take up the time of this section with going into it in detail. Coffee and tea and many other things might be mentioned that should be taken out of the diet, but they were purposely omitted.

Treatment of Pertussis

The use of convalescent serum in the prophylaxis and treatment of whooping cough has been disappointing. Vaccine therapy has been extensively employed. The opinions regarding the effectiveness of the vaccines are greatly at variance. The Council on Pharmacy and Chemistry has not admitted any "mixed" whooping cough vaccine to New and Non-official Remedies. In regard to simple pertussis bacillus vaccine it states that the evidence for its value either for prevention or for treatment is questionable. Drug therapy has fallen into discredit in the treatment of whooping cough. The use of x-rays, ultra-violet rays and other light treatment has been tried wtihout convincing results. When the weather permits, the best results are obtained by fresh-air treatment.—*Journal A. M. A.*, April 20, 1929, p. 1374.

PRESERVATION OF THE PELVIC FLOOR DURING LABOR, WITHOUT HOSPITAL OR NURSE *

By C. H. MAXWELL, M.D.
Morgantown, W. Va.

Recently we had a lecture before our society on "The Preservation of the Perineum During Labor." Three-fourths of the lecture was on the anatomy of the pelvic floor, and the other fourth was a moving-picture of an episiotomy. The anatomical description probably was good, but did not help us in our efforts to preserve the pelvic floor during labor. As a matter of fact, I never saw an episiotomy. I have always had to depend on other means to prevent tearing of the perineum, and, when unsuccessful, the ragged tears had to be repaired the best we could.

This paper is not intended as a scientific discussion of the preservation of the pelvic floor during labor. It merely tells what I actually do during labor. I do not even know the names of all the structures of the pelvic floor. This knowledge is secondary to the ability to preserve intact these structures while the child is being born. Except in the most precipitate labors, when the muscle strength of the uterus is abnormally great, the perineum can almost surely be preserved intact. Nature takes care of this in many cases, but the obstetrician has a duty to do here. It is his duty to see that the tissues are softened and stretched and dilated so that the baby can come through without tearing its way out. If he is present in time, he can do this instead of "settin' around and waitin'," although waiting often is a conservative procedure.

On digital examination, if I find the womb soft and the cervix partially dilated, and the pelvic floor soft and easily stretched, I may go away for a while, attending to other work, and leave the mother in charge of the "granny" who is nearly always present, with instructions to call me when the pains get five minutes apart. But if the uterus is hard and the perineum dense, and the pains strong, I stay on the job and put in my time "helping" the mother. You will find that there is a notion among the women that the doctor should "help," which is absolutely true in many instances. "Meddlesome midwifery" does not apply to a conscientious physician who uses common sense at the bedside. From personal experience I am sure this digital and manual manipulation is devoid of special danger of infection; for, in 2,700 deliveries, there has been no case of puerperal septicemia, and I have not hesitated to spend hours in stretching the birth canal so that the child can be born without rupture of the perineum. I have not been able to prevent tears in all cases, but the number has been very small.

I find that it is a problem to dilate the womb when nature has failed to do its work. The perineum is comparatively easily dilated when one has time. If the pelvic bones are close together and the baby's head large, there is usually an abundance of time to do all the necessary manipulations to insure a birth without a tear. The stretching is done during pains, so that the mother thinks the discomfort is caused by the "pains." If there is undue restlessness and a disinclination or inability to put up with the distress, I give a little morphine, which slows up the labor somewhat but puts the patient in a frame of mind that makes the pains better borne and at the same time helps to relax the tissues. As the head begins to press hard on the perineum and the pains seem strong, I give enough chloroform to hold in check the voluntary muscles and slow up the pains, thus giving more time to stretch the perineum and allow the head time to help in the matter. If the tenseness is such that rupture seems imminent, I push the chloroform to complete anesthesia and hold the head back during the pain and stretch the parts vigorously between pains. In a little while the head is born, and the perineum is intact. Yet, after the head is born, the shoulders are still to be looked after. Probably the shoulders rupture as many pelvic floors as the head. If one can get the under shoulder out first, and hold the baby hard against the pubic bone, the shoulders can usually be born without injury to the pelvic floor.

The use of pituitrin is a great godsend to the slow labor and tired doctor. Pituitrin comes from the brain of the cow, and if it is not mixed with the brain of the doctor it should be left out of his kit altogether. It should not be used till the parts are ready. If the mother has had a "shot" on a previous occasion and the baby came in five minutes, she can see no reason why she should not have another "shot" and end her troubles in short order. When you put her off for two or three hours, both the patient and the neighbor women become impatient by the long wait. The temptation is great to hurry things along, but it pays to work and wait till the conditions are safe, then give the "shot," and in a few minutes the baby is born with no perineal tear.

* Read before the Grant-Hardy-Hampshire-Mineral Medical Society.

There are so many things in obstetric practice to look after, it seems to me that there should be a greater effort made to give the physician, who does general work, practical, every-day, workable instructions on how to proceed when nurse and hospital are not available. I do not know the statistics, but I feel sure that nine out of every ten babies are born outside a hospital, and at least three out of every four have no graduate nurse to help.

The most of you have to do your obstetrical work in the home with what conveniences you find there, and, no doubt, your work compares favorably with the work done in the best hospitals.

Not long ago we had a most excellent talk in our society on "The Care of the Newborn Baby," by an eminent obstetrician from the city. It was a fine scientific paper—one that dealt with the care of the new baby as to measurements, weighings (hourly at times), comparing the results and averages, and giving conclusions. But his whole talk was predicated on a hospital equipped with everything that could be of any possible use in carrying out the technique. It also presupposed that internes and bevies of nurses were available to carry out the work. The lecture was excellent, but was without any actual value to us who rarely have a nurse and more rarely have hospital conveniences. Yet this has a value, for out of these observations will come certain findings and conclusions that the general practitioner can utilize in his every-day work. Technical studies and laboratory findings have given us our most wonderful therapeutic remedies. When we call at the drug store for a package of antitoxin or toxin-antitoxin, or pituitrin or insulin or typhoid vaccine or scarlet-fever vaccine, we are handed out, for a mere pittance, the product of the labor and brains of the scientific laboratory worker—remedies that make the practice of general medicine one of pleasure and certainty; whereas, the older men had to contend with the formidable diseases in an empiric and experimental way. All honor and praise to those who have opportunity to study in hospital and laboratory, to try to evolve better things for the benefit of the human race through the medical profession. Let us stand, as it were, with bared heads to these indefatigable laboratory workers for the uplift of mankind.

I am off the subject—"The Care of the Newborn Baby Without Hospital or Nurse." I am not telling what should be done; I am telling just what I do. There is nothing technical or unusual about the treatment—just about the same as any old "granny" does or should do. The baby is not chucked aside and some old woman told to wash it. There is nearly always some neighbor woman around to help. Just before the baby is born, I put a warmed diaper in the obstetrical cushion, and as soon as the head is born the secretions are wiped from the face and mouth. The baby has a warm place for arrival. Then, just immediately after it is born, a second warmed diaper is put over the baby and it is turned on its right side. I hold the fundus of the uterus down a minute or two, especially if the mother has had pituitrin (and most of them have had it), for if the uterus is not held down it is liable to contract and retract and hold the afterbirth like a vise, and this makes the delivery difficult. I ask the neighbor woman to place her hand where mine is placed and press rather hard toward the mother's back and toward her feet. Usually, in about five minutes after the baby comes, I clamp the cord about an inch from the abdomen, tie a tape around the cord a few inches away, cut the cord, lay the baby on a warmed diaper over a blanket, take off the hemostat, and tie the cord where the clamp has crushed it. I might say that the scissors, clamp, and tape have all been boiled and kept in the vessel in which they were boiled. The baby then has one or two or three ounces of an antiseptic oil rubbed on it, giving special attention to those that are unusually "cheesey." The baby is then weighed, rolled up in its diaper and blanket, and placed in a rocker near the fire and let "soak" a while in its oil dressing. The mother is attended to while the baby is thus waiting its time for the bath. After fifteen or twenty minutes I have the one helping give the child its bath; but, before bathing, I show the woman how to remove all the detritus from it with the oil-soaked diaper around it. The child is perfectly clean, but a bath is given it for manners' sake. Then the cord is dressed with gauze or absorbent cotton, with boric acid or bismuth freely applied about the stump. The silver is then put in its eyes. The baby is dressed, rolled up in its blanket, and placed in its bed on its right side.

The mother is told to let it nurse as soon as she rests a while, and nurse every six or eight hours until her milk comes and then every two hours in the day, and once or twice during the night. She is told to give freely of warm water if it is "cranky" before her milk comes. This is the routine the first hour of the baby's life. No instructions as to further care are given at this time.

EYE INJURIES *

By G. P. MORISON, M.D.
Martinsburg, W. Va.

When I was asked to prepare a paper for this meeting on some subject pertaining to the eye, the first condition that occurred to me was injuries. For the reason that we are situated in a community where there are seven or eight limestone quarries and where the employees are subjected at all times to flying spall of stone from sledging and breaking limestone.

In the last few years much has been done, largely through the efforts of ophthalmologists throughout the country, toward preventing eye injuries in industrial plants by safety methods, such as protecting goggles and devices of various kinds. Locally, several of the plants have employed safety engineers, whose duty it is to see that the men are working under proper conditions at all times. But, obviously, some of these safety measures are a handicap, and the employees frequently disregard the rules of the company when they interfere with their work. An example of this occurred about a year ago in one of the quarries, when a negro employee, working on contract, loading trucks with broken stone, was struck in the left eye by a flying spall of stone while using a sledge hammer. This man had been furnished protecting goggles by the company, but, as I later found, had taken them off and laid them on the truck because the day was hot and the perspiration caused them to fog. He had hardly removed them when a large, sharp stone struck the left eye, penetrating the eyeball and causing an open wound about half an inch in length across the cornea, with entire loss of substance. The eye was completely destroyed and enucleation was done. The company investigated the accident and found that a fellow employee, thinking it advisable to help, picked up the injured man's goggles and smashed the lens in one eye, but broke the wrong one.

Another case has caused considerable discussion because of the compensation department award. George D., white, age 38, working at a local quarry, was sledging stone when a spall struck the left eye, causing laceration of cornea, hemorrhage into the anterior chamber and vitreous. At the time he was admitted to the hospital, which was about one-half hour after injury, I made an examination and found the above condition. Vision was limited to light perception only. After two days, hemorrhage had almost entirely disappeared and vision was fingers at four inches. He remained in the hospital four days and was then sent home. I examined him daily at my office, and finally, after all inflammation had subsided, was able to get 20/200. I tested the eye, and, with correcting lenses, was able to get 20/40; but the pupil remained dilated and without the lens the best vision was 20/200. The field was restricted on both temporal and nasal sides, and I, therefore, reported him to the compensation commissioner as having a permanent disability of 10%. The commissioner awarded the man 33 1/3%, to which the company objected, and I believe the case is still pending final settlement.

Another case: Mr. S., age 44, hit in left eye by flying spall of stone. This man is a foreman and was struck while walking about near an employee who was sledging stone. He was sent to me at once, and examination disclosed a hemorrhage in the anterior chamber and contusion of the eyeball. The patient was put to bed with hot applications to eye, *q-3-h*. I was prevented from treating him further and he consulted Dr. McGuire of Winchester, Va. He later reported to me, wearing bifocal glasses which Dr. McGuire had prescribed, but with the pupil of the injured eye markedly dilated. His vision at the time was 20/20 R. 20/30 L., with correction lenses, and 20/20 right and 20/100 left, without. He therefore claimed compensation for a permanent disability because, before the accident, his vision was normal in both eyes—a fact verified by me, from records in the company office, of an examination made about three months previously by a Baltimore & Ohio Railroad examiner. I made a special eye-surgeon's report to the compensation department, reporting a loss of 10%. The company objected to this, claiming the man could perform his regular duties with glasses. But the pupil is still dilated and there remains 20/100 vision without the lens.

I have a third patient whose case is identical in character to the above two, who has recently been awarded $700, though the injury was sustained four years ago.

In 1926, Dr. Frank Allport read a paper before the Ophthalmological Section of the New York Academy of Medicine, on industrial eye accidents. Discussing the paper, Dr. May said, in reference to the remaining vision and methods of taking it, that the subject was very important, especially to those who are called upon for opinions regarding work-

* Read before the Eye, Ear, Nose and Throat Section of the West Virginia State Medical Association at Martinsburg on May 22, 1929.

men's compensation for ocular disability. He ventured to say that many ophthalmologists will agree with him that when a man has 20/40 vision and is awarded 50% of total ocular disability, the award is excessive. An examination of the charts which Dr. Snell has constructed indicated the opposite extreme, *viz.*, an individual with 20/40 vision is given 10% of total ocular disability. To me this seems too small. The proposal of the committee of the Ophthalmological Section of the American Medical Association is to give such a claimant 25% of total visual disability when vision is reduced to 20/40. This, to my mind, seems fair.

The question arises, How are we to report these cases; what are we to be guided by? In fairness to both employer, on what basis to report the percentage of disability? And this brings me to the closing topic of this paper—malingering. One of the above patients attempted to convince me that his vision was really worse than it was. Malingering has become of real importance since the advent of workmen's compensation laws in various states.

As Dr. Larok has pointed out, weakness of human character is responsible for the existence of malingering, encouraged, to a certain extent, by the law, which provides no punishment. The injured has nothing to lose, but a great deal to gain. If he is successful (and quite frequently he is), his compensation increases many fold; if he is not, he gets the compensation due him according to law but is not punished for the attempted fraud. All of us have had experience with attempted fraud, but in spite of this the vast majority of the injured are honest.

Therefore, a diagnosis of malingering should be made after a most careful and thorough examination and observation, with careful weighing of all evidence, including the history of the accident or injury together with all objective and subjective findings, always keeping in mind that the injured is entitled to the benefit of the doubt. There are several conditions which, after a superficial, hasty and unsympathetic examination, may lead us to brand a patient as a malingerer though he is perfertly honest and acting in good faith. Beginning organic lesions of the fundus may be present, but not sufficiently developed to be recognizable with the ophthalmoscope, thereby giving rise to a suspicion of malingering. The physician should make prolonged observations and repeated examinations before making a positive diagnosis.

Before I close, allow me to cite one more case which I consider important, because it, in a large measure, has to deal with the general practitioner. Mr. W., white, age 35, while making some repairs on his farm, had occasion to use a cold chisel, which he was striking with a hatchet. Suddenly he felt a sharp pain in his right eye, but after a few moments it passed away and he thought no more of it. However, in a few days he noticed his vision becoming dim in that eye, with pain from light and some redness. He decided to consult his family physician. The physician examined the eye and found nothing the matter and so advised the patient, who went home feeling that perhaps it was his imagination. But the vision gradually became worse; as he told me later, he kept testing it by looking at the figures on a calendar across the room. He consulted me, and an examination with oblique illumination revealed a small spot in the center of the cornea. With the loupe it looked like an embedded foreign body. With the opthalmoscope a small, dark object was seen which seemed to be lodged in the lens. An x-ray picture was taken, but, unfortunately, the facilities were limited and the only evidence shown was a foreign body some place in the skull. From the history and objective signs I felt sure a piece of steel was in the eye. The patient was then sent to Baltimore, where a diagnosis was made of a piece of steel in the lens, which was subsequently removed by cataract extraction.

I have called your attention to this case because it demonstrates the value of the general practitioner's use of the ophthalmoscope, which has been greatly increased during the past few years. The introduction of the luminous ophthalmoscope has brought the subject of ophthalmoscopy within the reach of every medical practitioner. Had the general practitioner used the ophthalmoscope, he no doubt would have seen the dark spot and saved the patient at least ten days of suffering, not to mention the possibility of early extraction and the resultant cataract operation.

To recapitulate, we should exercise more care in the examination and prognosis of some of these cases. In the two just cited, what has happened? Is it a nerve injury, muscle or tissue, which causes the pupil to remain dilated permanently? Will it be permanent? What percentage of disability are we to allow these patients? Are we to be governed by the compensation department's formula or our own opinion?

MUSCÆ VOLITANTES, MYODESOPSIA *

(*Known as and called Vitreous Opacities*)

By E. R. McINTOSH, M.D.
Elkins, W. Va.

Although this affection is characterized as one of the minor disturbances in the field of ophthalmology, especially where there is no diseased condition of the eye existing, nevertheless it is a source of worry and considerable inconvenience to the one afflicted. The average patient complains of these spots or specks constantly before the eyes, and thinks he is suffering with a very serious disease of that organ. The trouble is usually aggravated if the eyes are directed toward a strong light, and especially so if there is a white background. Many of these sufferers go day in and day out brushing what seems to them an imaginary shadow away from their eyes. These specks assume all kinds of shapes and colors. Sometimes they are like spider-webs, again like large casts varying in color, sometimes gray and again yellow. These specks are very troublesome to patients, especially during the act of reading; they complain of the specks floating across the page of the book, and this alone is conducive to a nervous condition.

Ophthalmoscopic Examination.—In this class of cases there is no true opacity of the vitreous, and the ophthalmoscope fails to detect, in these instances, any floating opaque substances.

Etiology.—Some authorities claim these opacities are due to shadows being thrown upon the retina by natural formed elements in the vitreous body—perhaps the remains of embryonic tissue. According to Gould, corpuscles in the retinal vessels are responsible for the phenomenon. Whatever the cause of this affliction, these floating specks are undoubtedly due to an extremely sensitive condition of the perception apparatus by which the normal opacities of the vitreous are noticed.

Now, you can well see, in individuals who have not this hypersensitiveness of the perception apparatus, the specks or spots which are in all vitreous, more or less, and are not noticed at all. These opacities or specks are much more noticeable when the patient is below par either mentally or physically. I have often observed, in my own practice, that women are more likely to complain of these spots during the menstrual period. Occasionally, these spots or specks become of such an aggravating nature that relief is sought at the hands of the oculist, and that is the reason for this paper. I have had a number of this class of patients in the past few years, and have had quite a little success, in a small way, in improving their mental and physical condition.

The treatment of this class of cases is hygienic, mental, physical, mechanical, and medical. A thorough physical examination of these patients should be the rule. Correct any bodily defect outside the eyes. Occupation plays an important rôle in the general treatment of these patients. If they are office workers, shut-ins most of the day, leading a sedentary life, there is a lack of physical exercise. I put such patients on some form of light exercise, calisthenics morning and night. Have them walk at least two miles a day in the open air, and take a tepid bath on retiring, and, if they are of robust physique, a cold bath after their exercise in the morning. If you can build up a good physical condition, the mental condition, in my experience, rights itself.

In regard to the mechanical treatment of these cases: I carefully refract my patient and correct such errors as exist in refraction, and I prescribe the Crooks A or B shade lenses, using my judgment which shade he shall use. It has been my experience that, if a careful refraction is made and corrected and the colored lenses worn, this trouble is greatly mitigated, and, in fact, as long as these lenses are worn, they are more or less free from the annoyance of these spots or specks before the eyes. It is a peculiar fact that in these cases, where we have a hypersensitive condition of the perception apparatus, the rays of light given off from the sun aggravate this trouble very materially, and it is probably due to the fact that the bright rays of light contain more or less of what is known as the ultra-violet ray, which seems to have an especial affinity for these sensitive membranes. Now, if the proper refraction is made and slightly colored lenses are worn, this ray seems to be extracted before it strikes the retina. In regard to the medical treatment, I have found that a saturated solution of potassium iodide has a very beneficial effect. When the digestion is good and there is no contraindication to the use of this drug, I have the patient begin with five drops in a little water three times daily, gradually increasing a drop at each dose until twenty drops are being taken, then cut it down to five drops thrice daily and keep them on this preparation for at least five weeks.

In summing up the treatment, bear the following facts in mind: Personal hygiene plays a very important rôle in all eye affections. The proper amount of sleep in a well-ventilated room, the daily bath,

* Read before the Barbour-Randolph-Tucker County Medical Society at Philippi, West Virginia, on May 15, 1929.

the proper amount of exercise and recreation, and the care of the bowels, are all necessary. It has been my experience that, if the bowels are allowed to become sluggish, this trouble is greatly aggravated.

In closing my article, my injunctions are: See that your patients get the proper amount of sleep, work, and play, all which are factors in alleviating this troublesome eye affliction.

CASE REPORTS

PULMONARY ATELECTASIS AND SPONTANEOUS PNEUMOTHORAX *

By WM. M. SHEPPE, M.D.
Wheeling, W. Va.

The sudden cessation of the function of one lung is a striking and dramatic occurrence, productive of marked clinical symptoms. The condition is one of varied etiology and the terminology employed has become confused and overlapping. It is my purpose to sharply contrast the two clinical entities, pulmonary atelectasis and spontaneous pneumothorax, by presenting typical cases of each for comparison.

CASE REPORTS

A. Pulmonary Atelectasis.—CASE 1.—The patient was a colored female, age 30, admitted to the Wheeling Clinic complaining of "loss of weight, loss of voice, and choking spells." The duration of the disease was five months and the past history was unimportant. Physical examination revealed moderate exophthalmos, emaciation, pulse 110, and a fine tremor of the hands. Examination of the lungs was negative. Basal metabolic rate was plus eighty-two. Wasserman and sputum were negative. Laryngeal examination demonstrated weakness of both internal tensors of the vocal cords. A small amount of mucus was noted in the glottis. Diagnosis: Exophthalmic goiter with involvement of recurrent laryngeal nerve.

Rest in bed and Lugol's solution reduced the metabolic rate to plus forty-two and the clinical symptoms improved in proportion. A subtotal thyroidectomy was performed by Dr. R. B. Bailey (anesthesia novocain N_2O-O). Thirty hours after operation the patient suddenly complained of dyspnea and the pulse and the temperature rapidly arose. Examination revealed contraction and diminished excursion of the right thorax. The percussion note was flat and the tactile fremitus absent. Breath sounds were tubular and moist râles were heard throughout the lung. A bloody, muco-purulent sputum was expectorated in considerable quantity. Pneumococci were reported in large numbers. Oxygen therapy was not well tolerated. The patient was turned on the right side. X-ray examination revealed an airless lung with trachea and heart

FIG. I.—Pulmonary atelectasis.

deviated toward the right. The right diaphragm was high and immobile. (Figure 1.)

The pulse, temperature and respiration gradually decreased and the patient was discharged thirty days after operation. Breathing exercises on the blow-bottles were prescribed. On examination twenty days after discharge, a relative decrease in expansion and ventilation of the right lung was noted. The resonant note at the right base was decreased. Moist râles could still be heard throughout the lung. Normal movement was present in the right cord, but the left cord was immobile. X-ray of the chest showed the heart and trachea still displaced to the right. The pulmonary markings were accentuated. An interlobar septum was noted, and there was pleural thickening at the apex. Ventilation was practically normal. (Figure 2.)

CASE 2.—Mr. E. F., white, male, thirty-six, was admitted to the Ohio Valley General Hospital, complaining of "discomfort in the right lower abdo-

* Read in part before the staff of the Ohio Valley General Hospital, Wheeling, West Virginia, May 14, 1929.

From the Division of Medicine, Wheeling Clinic, Wheeling, W. Va.

men." The physical examination, including the chest, was negative except for a right inguinal and femoral hernia. A right inguinal and right femoral herniotomy was performed by Dr. J. O. Rankin (N_2O-O anesthesia). Twenty-four hours later the temperature rose to 102° and the patient complained of pain in the right side. Cough and profuse expectoration were present. The sputum contained *M. catarrhalis*. When examined, the patient did not seem acutely sick. He was lying on the right side. The percussion note over the right chest was flat. Fremitus was decreased. Breath sounds were very faint and tubular in character. The Hoover sign was positive. X-ray examination disclosed the heart and trachea pushed to the right side, the right thoracic cage much contracted, and an airless lung. (Figure 3.)

FIG. II.—Pulmonary atelectasis following recovery and discharge from hospital. (Note elevation of diaphragm and narrowing of intercostal spaces.)

The patient was turned on the left side. Five days after the onset a large plug of mucus was expectorated. The temperature immediately declined and all symptoms disappeared.

Physical and x-ray examination ten days later revealed a normal right lung. Breathing exercises were continued on the blow-bottle and further convalescence was uneventful.

Discussion of Cases of Pulmonary Atelectasis.—It is probable that in all these cases some actual infection is superimposed upon the atelectasis. Case number one showed the greater evidence of infection. She was very much sicker and convalescence was more prolonged. This may possibly be accounted for by the difference in bacteriologic findings in the sputa.

Atelectasis seems especially prone to occur following thyroidectomy. Ball[1] reports four such cases from The Mayo Clinic, all of which ended fatally.

A certain number of cases will be encountered in whcih definite physical and x-ray signs of both pneumonia and atelectasis will be present. Coryllos and Birnbaum[2] feel that in such cases the diagnosis must be "pneumonia with atelectasis or atelectasis with pneumonia," depending upon the preponderating signs.

Whether injury to the vagus (recurrent laryngeal) or phrenic nerve during thyroidectomy plays any part in the subsequent collapse is as yet undecided. Experimental results do not confirm this idea. The thyroidectomized patient here reported was known to have a disturbed function of the laryngeal muscles, presumably due to pressure on the recurrent laryngeal. At present no one theory of etiology seems to fit all the observed facts. It seems most logical to suppose that several factors are involved:

FIG. III.—Pulmonary atelectasis. (Note narrowing of intercostal spaces and change of position of cardiac outline.)

(*a*) Inhibition of the cough reflex by some toxic or reflex stimulus.

(*b*) Impairment of respiratory movement, either from tight bandages or as a defense reaction to irritation paralysis from a toxic neuritis.

Association of the above factors allows mucus to collect, thereby blocking the bronchus; the alveolar air is expelled or absorbed and collapse occurs.

In considering any theory of etiology it must be remembered that many cases have occurred in which no bronchial obstruction could be demonstrated. The alveoli may not be in direct apposition, as it has been shown many times that exudation of serum, diapedesis of red blood cells and dense infiltration of the tissues with lymphocytes represents the characteristic pathology. This accounts for the extreme density of the radiographic shadows.

In treatment the simple maneuver of rolling the patient from side to side should first be tried. This resulted in expulsion of the mucus plug in five cases reported by Sante.[3] If this is not effective, aspiration by the bronchoscope should be resorted to.

After relief of the bronchial obstruction, breathing exercises with the usual blow-bottles are useful as a means of inflating the lungs.

B. Spontaneous Pneumothorax.—CASE 1.—Mr. D. E., white, twenty-five, was admitted to the Wheeling Clinic on December 23, 1928, complaining of "pain in the chest." Examination of the lungs was negative on auscultation and percussion. Temperature 98.2°. Patient treated symptomatically and recovered in twenty-four hours. No x-ray of the chest was made at that time. On January 21, patient changed a tire on his automobile at about four o'clock in the afternoon, and at six o'clock in the afternoon he had a sharp pain in his right chest and was very short of breath. Any sudden movement produced pain. He stayed at home, but did not consult a physician until January 23. At that time he was not noticeably short of breath, but felt that he did not get enough air with each inspiration. He stated that from the December examination until the present one he has been having no thoracic pain. He has had a swollen cervical gland, which he attributes to an infected tooth. Strength and endurance are good. Last weight 135; present weight 140. No night sweats; no cough or cold recently, but has a great deal of mucus in the nose. The past history revealed Vincent's angina five years ago and pneumonia three times.

Examination of the chest showed it to be rather thin. Expansion was equal and symmetrical. Respiration was rather shallow on both sides. Tactile fremitus very marked over entire left lung. Percussion of left lung shows no changes in percussion note. Right lung: Percussion note is high-pitched over the apex, especially behind, extending down to the middle of the body of the scapula. It is decreased toward the mid-line. A small area behind on the right side is tympanitic. Auscultation: No adventitious sounds of any type are heard in either lung. Breath sounds over the right apical region are quite indistinct, but may be heard. Breath sounds over tympanitic area at the right base are absent.

X-ray examination of the chest shows a widening of the intercostal spaces in the right lung field. The heart is not enlarged, but is slightly displaced to the left. The aortic arch is not broadened; the trachea is straight. The pulmonary markings are coarsened and exaggerated over the whole left lung field. They are, however, only visible in the middle and

FIG. IV.—Spontaneous pneumothorax, lower right lobe. (Note area of pleural involvement.)

lower central part of the right lung field. In the lower part at the periphery of the right lung field there is a uniform dark shadow which is limited toward the center by the middle and lower lobe of the lung. The apex region also shows absence of lung structure and a uniform dark shadow. In the middle part of the right lung field, corresponding to the border between the upper and middle lobe,

a dense, broad, halfmoon-shaped shadow may be seen, which does not change in either the upright or prone position and is lying, as proven by fluoroscopic examination under different angles, in the middle of the thorax.

A diagnosis of spontaneous pneumothorax was made and the patient was put to bed. After four weeks the right lung was entirely normal by physical and x-ray examination. There has been no recurrence in sixteen months. (Figure 4.)

CASE 2.—Mr. M. K., white, twenty-eight, was alighting from an automobile when he felt a sudden severe pain in the right chest. The pain was felt both anteriorly and posteriorly and was accompanied by a tugging sensation in the epigastrium. The pain was very severe and caused him to lean toward the right side. The patient stated that he had had pleurisy on the right side seven years previously, and had noted vague pleural pains from time to time. The past history was otherwise negative.

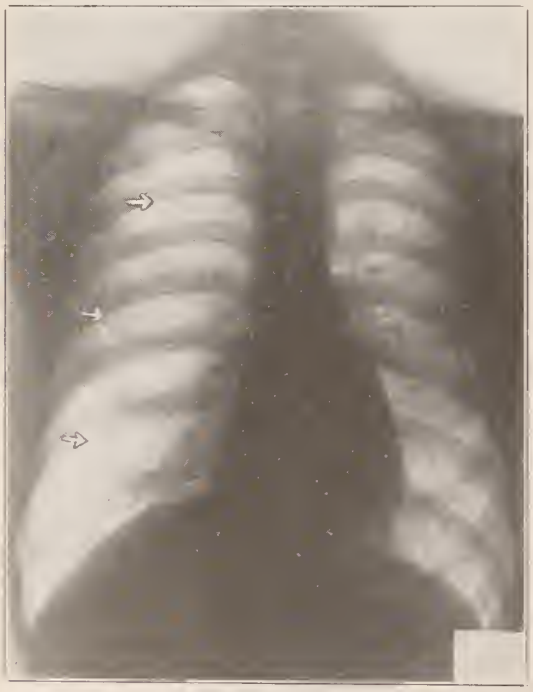


FIG. V.—Spontaneous pneumothorax involving entire lung.

Physical examination revealed a man apparently suffering considerable pain. The examination aside from the chest was negative. Markedly decreased expansion was noted on the right side. The Hoover sign was positive. Tactile fremitus was markedly decreased. Resonance was slightly decreased. The breath sounds were very faintly heard over the entire right chest.

X-ray examination disclosed a slight displacement of the heart toward the left. (Figure 5.) The entire right lung was collapsed, the lateral border of the lung being sharply differentiated from the air-filled pleural cavity.

The patient was hospitalized. After two weeks the use of blow-bottles was begun. Following this procedure the pneumothorax was rendered complete. After ten weeks of complete rest in bed the lung suddenly expanded. X-ray and physical examination, made on two subsequent occasions, have revealed no evidence of pathology in the lung. There has been no recurrence in twelve months.

CASE 3.—Mr. T. M. B., white, male, age 48, was seen at his home. He was suffering from a slight influenza of two days' duration. He had been in bed and got up to go to the bathroom. He felt an extremely severe pain through the chest and epigastrium, and thought that he was dying. He became blue in the face and collapsed on the floor in coma. Patient was placed on the bed and revived in about five minutes. He remained rather cyanotic and respiration was difficult. The epigastrium was tender and resistant. Temperature 99°. The epigastric rigidity gradually decreased as well as the tenderness. Stomach was found to be dilated. The apex beat was located six centimeters from midsternal line in the fifth interspace. Sounds were clear and forceful. No murmus at any valve area. Blood-pressure was 140/80. No arrhythmia.

One hour after the accident occurred the neck and face were still suffused with blood but were not cyanotic. Percussion of the right chest revealed a very slight decrease in the percussion note between the axillary lines and at the right base. The movement of the costal margin on the right was decreased. On auscultation no breath sounds could be heard beyond a point four centimeters to the right of the sternum on ordinary respiration. A tubular type of breathing was heard on forced respiration. As the patient was very cyanotic, no attempt was made to transport him for the purpose of taking an x-ray. After ten weeks in bed, with gradual subsidence of symptoms, the lung suddenly expanded, as shown by x-ray and physical examination. No pathology was demonstrated in the lung. There has been no recurrence in two months.

Discussion of Cases of Spontaneous Pneumothorax.—All three of the reported cases occurred on the right side. All three cases gave histories of previous respiratory infections on the involved side. No definite lesions, with the exception of slight pleural

thickening, could be demonstrated in any of the three. The onset (sudden, sharp thoracic pain) was similar throughout.

Although we are aware that most clinicians feel that tuberculosis is the most likely etiological agent, yet we have been unable to demonstrate such an etiology. Three other cases (not included in this report) have also failed to develop any evidence of tuberculosis during a long period of observation. We feel that a localized, pyogenic pleurisy with rupture of a superficially placed emphysematous bleb could well initiate the condition.

SUMMARY OF DIFFERENTIAL DIAGNOSTIC POINTS

PULMONARY ATELECTASIS		SPONTANEOUS PNEUMOTHORAX
History	Usually follows surgery	Often follows respiratory infection
Onset	Fever; very slight pain moderate dyspnea	Severe pain; no fever.
Signs and Symptoms		
Cough	Present	Present
Sputum	Abundant	None
Resonance	Markedly decreased	Slightly affected
Fremitus	Absent	Variable
Breath sounds	Distant and tubular	Absent
Rales	Present	Absent
Expansion	Decreased	Decreased
Diaphragm	Fixed	Mobile
Interspaces	Narrowed	Widened
Trachea	Deviated toward affected side	Not deviated
Lung field (X-ray)	Dense	Air in pleural cavity
Heart	Pushed toward affected side	Pushed toward normal side
Pathology	Collapse of alveoli Bronchial obstruction Exudation of serum--- R. B. C. and lymphocytes	Air in pleural cavity
Treatment	Rolling from side to side Bronchoscopy Blow-bottles	Rest in bed (Blow-bottles contraindicated)

As to treatment, we feel sure that the injudicious use of the blow-bottles in case number two prolonged convalescence, and feel that they have no place in the treatment of spontaneous pneumothorax. Rest in bed is essential until dyspnea, cyanosis and epigastric pain have disappeared; a particular posture is not essential. The patient may then be allowed very limited activity. Following recovery, heavy lifting or straining should be interdicted as the tendency to recurrence is well known. Frequent examination for months is desirable to eliminate the possibility of tuberculosis.

General Discussion and Summary.—Two cases of pulmonary atelectasis and three cases of spontaneous pneumothorax are presented. Theories of etiology and differential diagnostic criteria are briefly discussed.

It is quite probable that many cases of pulmonary atelectasis have been diagnosed as "post-operative pneumonia." The entity is certainly not a new one, as it was described as early as 1890. The diagnostic points, however, seemed to have escaped general notice until reëmphasized by Jackson and Lee[6] in 1925.

Pneumothorax has long been recognized in frank tuberculosis and following perforating wounds of the chest, but its recognition in young, apparently healthy individuals seems to be relatively recent.

The terminology applied to these and other forms of pulmonary collapse has been loosely used and has led to much confusion. A concerted effort should be made to employ descriptive terms which accurately express the characteristic pathology.

REFERENCES

1. Ball, R. P.: *Arch. of Path.*, May, 1928, Vol. 5.
2. Coryllos, P. N., and Birnbaum, G. L.: *Arch Surg.*, Vol. 26, 1928.
3. Sante, Leroy: *Annals of Surg.*, August, 1928.
4. LeWald, L. T.: *Arch. of Surg.*, January, 1928, Vol. 16, Part II.
5. Mohler, H. K.: *Am. J. Med. S.*, Vol. 178, No. 4, April, 1929.
6. Jackson, C., and Lee, W. E.: *Ann. Sur.*, 82, 1925.

Mercury Sulphide-Hille

The Council on Pharmacy and Chemistry reports that the Hille Laboratories, Inc., Chicago, requested recognition of Colloidal Mercury Sulphide-Hille as a colloid prepared by the "condensation method," the stabilizing medium being a hydrolyzed protein "free from the properties responsible for the production of anaphylaxis in rabbits." As evidence for the value of the product the firm submitted the manuscript of a paper by G. E. Wakerlin and C. Eiseman, which has been published, the manuscript of an unpublished paper by Wakerlin, and clinical data by R. H. Paterson. The unpublished paper by Wakerlin gives the results of preliminary animal experimentation, which do not permit definite conclusions. The clinical trials of Paterson should be given little weight and can not be taken to exclude risks from intravenous injection. The unpublished paper by Wakerlin (which is to be published in the *Archives of Dermatology and Syphilology* and was considered by the Council at the request of its editor) is thus far the chief available evidence in favor of Colloidal Mercury Sulphide-Hille and it seems to show that the product is now ready for clinical trial. The Council postponed consideration of the acceptance of the product to await the results of clinical trials.—*Journal A. M. A.*, April 20, 1929, p. 1349.

TREATMENT OF LATE TOXEMIAS OF PREGNANCY

By R. J. CONDRY, M.D.
Davis Memorial Hospital
Elkins, W. Va.

The general subject of the toxemias of pregnancy continues to occupy professional attention to a considerable degree. In regard to the treatment, no noteworthy results have been accomplished, although it may be recorded that the past few years have shown conclusively the advantages of the conservative treatment, particularly in the convulsive types of the disease. The pendulum has swung from the radical to the conservative side, and at present those believing in a middle ground have steadily increased in numbers.

One of the most important advances in the treatment of eclampsia and its allied conditions, within recent years, is the employment of carbohydrates. This has resulted from the work of Drs. Titus and Givens, who have presented experimental evidence to show that the liver function is impaired and the body flooded with toxins after carbohydrate starvation. From this research the above-named authors have advocated the use of a high carbohydrate diet and glucose intravenously, combined with other measures which may well be designated conservative, including morphine, purges, and limiting interference with the pregnancy only when the patient's condition is improved or the fœtus can be delivered without undue shock to the mother. In a series of 20 cases so treated, there was a mortality rate of 15% as against 29% without glucose therapy.

Another important contribution is that advocated by Lazard. He uses 20 c.c. of a 10% solution of magnesium sulphate intravenously, in addition to other measures. This advance is based on the long-known sedative action of magnesium sulphate on the nerve cells. He reports 17 cases with but one maternal death, all of which were profoundly toxic and were having convulsions when first seen.

Within the past two months we have had occasion to treat three cases of late toxemia. In each instance we followed the conservative method.

CASE 1.—Mrs. M., age 25, primipara about at term, was admitted with preëclamptic toxemia. There was a marked generalized edema, albuminuria, and the blood-pressure was 180 systolic and 135 diastolic. She did not have any convulsions. The following treatment was instituted:

1. High carbohydrate diet.
2. Magnesium sulphate, 2 c.c. of a 50% solution, and morphine, gr. ¼, hypodermatically every three hours.
3. Intravenous injections of magnesium sulphate and glucose every day.
4. Purges and general hygienic measures.

Four hours after admission and the first intravenous injection the patient had a mild convulsion lasting a few minutes. The blood-pressure at this time was 190–118. Within a short while the patient felt fairly well. The following day there was some improvement in the general condition. Blood-pressure was 168–118. Two days after admission the patient went into labor and was delivered of a full-term baby weighing eight pounds.

After delivery, recovery was uneventful. The edema subsided rapidly, the urinary finding cleared entirely, and the blood-pressure for the five days preceding discharge was 120–80. The patient was discharged three weeks after admission, in excellent condition. Blood-pressure 120–80; urine normal.

CASE 2.—Mrs. S., age 28, primipara about seven months pregnant, was admitted following an eclamptic convulsion. During the convulsive seizure the tongue was injured, and on admission was about twice normal size. There was a generalized edema, though not marked; albuminuria, and the blood-pressure was systolic 164, diastolic 130.

Practically the same treatment was instituted as in the first case. After the first intravenous injection the blood-pressure increased, but there were no convulsions. There was a gradual improvement in the general condition.

Four days after admission this patient went into labor and was delivered, without any difficulty, of a premature child weighing 4 pounds and 4 ounces. Recovery was uneventful. Some extra attention was necessary for the baby, but upon discharge it had gained in weight and generally was in fair condition. In this patient also the urinary findings became normal, and the blood-pressure on discharge was 120–78.

CASE 3.—Mrs. G., age 27, primipara about at term, was admitted with preëclampsia. There was only slight edema of the face. The urine showed a characteristic albuminuria, and the blood-pressure was 160–110. This was a twin pregnancy.

The same treatment was carried out as with the other two cases. Improvement was noted from the beginning of treatment. Five days after admission this patient was delivered of twin babies, weighing six pounds each.

Since delivery there has been a fairly rapid im-

provement in her condition. The urine has cleared of albumen, and the blood-pressure is 130–84.

While it is impossible to formulate any conclusions from these few cases, yet it does show that conservatism is well worth while. However, let us remember the old saying, "An ounce of prevention is worth a pound of cure." This most certainly applies to the handling of all obstetrical patients. The most careful attention from the beginning of pregnancy to the end of the puerperum is the only solution to the reduction in maternal and fœtal mortality and morbidity.

ABSTRACTS

The Pancreatic Triad

W. M. Boldyreff (*Am. J. Med. Sc.*, June, 1929, pp. 776–790): Previous experiments had shown that a complete pancreatectomy or a severe loss of pancreatic juice through a fistula of the main pancreatic duct involve the three following pathologic conditions to which the term *pancreatic triad* was affixed: 1. A rise in the percentage of the blood sugar (that is, a decrease in the content of glycolytic ferment in the blood). 2. A decrease of the blood coagulability, apparently due to decrease in the content of fibrin ferment in the blood. 3. The appearance of leucocytosis. Under normal conditions the pancreatic juice secreted into the intestine is immediately absorbed therefrom into the blood and then enters the organism, supplying its tissues with all its ferments. But when the juice is discharged outside the organism, there is a lack of all pancreatic ferments—a "physiologic pancreatectomy."

Numerous tables are presented, illustrating the effect of total and partial pancreatectomy, and the effects of pancreatic fistula on the leucocytes, blood coagulability and blood sugar, as well as the pancreatic triad under various conditions such as after ligating both pancreatic ducts. A table showing the triad in man is given, as well as a kymographic record showing the periodical fluctuation in blood sugar evidently due to periodical increase and decrease in pancreatic glycolytic ferment in the blood. Graphic charts showing the parallelism in the periodical leucocytosia and the periodical increase of fibrin element in the blood, a table showing the effect upon the leucocytosis and blood coagulation time following the introduction of zymogene pancreatic juice into the blood, and after introduction of active pancreatic juice into the duodenum.

The author concludes that complete loss of pancreatic fluid, either by pancreatectomy or fistulæ, produces a "pancreatic triad" or (1) a rise in the percentage of blood sugar; (2) a decrease of the blood coagulability; (3) the appearance of leucocytosis. He suggests that if all the members of the triad are present in a pronounced degree, the diagnosis of some pancreatic disturbance is certain. Furthermore, in the presence of the triad, operative intervention is likely to be followed by unfavorable results; poor wound healing is probable, and even gangrene is possible. He notes that Glaser has reported this triad in diabetes mellitus in man. M. C. B.

Uterine Muscle

J. Isfred Hofbauer, Baltimore (*Journal A. M. A.*, Feb. 16, 1929), calls attention to certain characteristics of the uterine wall that were established after twenty-six uteri obtained during the various months of pregnancy had been studied. Emphasis is laid on the development in the outer layer of a specialized structure, whose typical microscopic features are in marked contrast with the rest of the uterine muscle and closely resemble the Purkinje system of the heart. It is possible to distinguish the fibers of this specialized system simply on the basis of their microscopic appearance, and it is probable that such histologic modifications must be associated with a corresponding difference in function. Since the cell under consideration is of greater diameter than the ordinary uterine muscle fiber and is conspicuous by its histologic character, its presence in the deeper muscle layers can be ascertained without difficulty. Accordingly, cells of the specialized type may be seen permeating the muscle stratum beneath the vascular layer either as a few isolated elements or more often grouped about the periphery of the muscle strands. When cross sections were examined through the entire thickness of the uterine wall, the presence of a thin, longitudinal bundle of these cells was distinguishable in the upper two thirds of the uterine body, and interspersed between ordinary muscle strands at the margin of the uterus. Moreover, microscopic study revealed the occurrence in deeper muscle layers in the lower part of the posterior wall of the uterus of two thin longitudinally arranged bundles, which connect the lower pointed end of the formation on the posterior uterine wall with the macroscopically visible white zone in the lower uterine segment in the region of Douglas' pouch. No study has as yet been made of the nerves; however, the bundles of the specialized system within the posterior wall of the lower uterine seg-

ment and at the margin of the uterus lie in close proximity to nerve fibers. Impairment of the functional integrity of the specialized system apparently interferes with the coördinated rhythmicity and contractility of the pregnant uterus. The fact that in severe cases of premature separation of the normally implanted placenta, when the uterus fails to contract or to respond to any stimulant employed, these fibers are dissociated by hemorrhage would seem to lend support to this view. The further fact that defective development of the specialized system was observed in a specimen obtained from an elderly primipara can also be interpreted as affording presumptive evidence in favor of a correlation of this phenomenon with the incidence of inertia uteri, so frequently seen in such patients. Hofbauer is inclined to assume that the specialized system of the human pregnant uterus may represent an analogue of the His bundle in the heart. Located on the surface of the pregnant organ, it is placed in the most advantageous position for the quick distribution of an impulse to the uterine muscle, the wave spreading from without inward. The evidence at hand tends to show that the development of the fibers is demonstrable from the fourth week of pregnancy, while by the middle of the process the structure has become well established. It is interesting to note that in the premenstrual period the muscle fibers of the outer layer show a definite swelling of their cytoplasm.—*Missouri Medical Journal.*

TUBERCULOSIS ABSTRACTS

Serial X-Rays and Evolution of Tuberculosis

To allude to the "film" as a "living pathology" may be an exaggeration, but stereoscopic films of the chest may rank as a means of studying living pathology. Before such a goal may be securely established, however, considerable standardization will be necessary. This short résumé describes a standardized technique that produces satisfactory results for the study of the evolution of pulmonary tuberculosis, together with a few remarks on the uses of such a method.

The x-ray "picture" is a most valuable aid in the diagnosis of pulmonary tuberculosis. The "film" also reveals a variety of shadow combinations in various phases of evolution that go hand in hand with the clinical course of the disease. It is desirable, therefore, that a method be evolved that will enable us correctly to register the various changes that are present in the lung or that may later take place. While the film reveals only shadows, these shadows portray an anatomical or a pathological condition existing in the chest. Yet we are not to infer from this that the film reveals every anatomical or pathological change in the path of the ray; a small area of disease may be so located as to escape detection, due to the overlying denser tissues—anatomical or pathological. Nor is one always able to determine the character of the structure or outline of a given shadow. Experiments have shown that an object having geometric form may often be seen in a field, whereas one not having a definite shape or outline may be practically lost in the same field. Dr. Kennon Dunham has aptly used the aphorism, "Shadows do not lie," but inexperience may make inferences faulty.

Many Roads Lead to Rome.—There are many ways to obtain good films. The one important point is to be sure that the factors involved in the making of a film are as you suppose them to be. Also, it is not of so much importance that a film should be of an exact density as it is that one may be able to reproduce results that are within reasonable limits of density and comparable. The technique now in use at the Trudeau Sanatorium is as follows:

Eastman dupitized films—Eastman developer, 100 M. A. Coolidge tube—Kelley-Koett tube and Cassette shifter. Double intensifying screens. Snook transformer. Distance 48 inches—milliamperes 100—time 1/15 second. Kilo voltage is variable for different chest depths.

A variety of opinions is held by many leading röntgenographers as to which technique produces the most satisfactory chest film. Two factors of considerable importance are the length of exposure and the tube film distance. With the ever-increasing power of x-ray machines and tube capacity, it is possible to cut the time down to 1/120 of a second with the possibility of this being shortened; but the question arises, is there any need for working faster than a speed that is sufficient to arrest satisfactorily the shadows of the moving parts, which can be done in many instances with 1/15 or 1/20 of a second?

Serial Films are Valuable.—Serial films in the study of the progression or retrogression of the pulmonary disease are valuable. This does not apply alone to pulmonary tuberculosis; but as pulmonary tuberculosis is so often a chronic process, it is not strange that investigators wax enthusiastic when they find how often the progress of the disease can be followed and how frequently the various changes

that take place in the lungs fit in so nicely with the clinical or symptomatic behavior of the patient. At the Trudeau Sanatorium for the past ten years the evolution of pulmonary tuberculosis in upwards of 3,000 patients has been followed over the usual period of residence at the Sanatorium. In many instances, the serial work has been carried on for years after discharge from the institution.

Early infiltrations have been followed through the various intermediate steps or phases until apparently a complete resolution or, as is more often the case, organized fibrosis takes place months or years later. Many collateral inflammatory reactions or new foci, as the result of repeated exacerbations, have been seen to develop in the course of the disease. These also can be seen to resolve or progress as the case may be. While many early changes can be recorded on the stereographic films, it is not to be inferred that the film is capable of registering the earliest tubercle formation. However, through experimental work instituted by Dr. Lawrason Brown and carried on at the Trudeau Sanatorium, we were able to demonstrate röntgenographically tubercles in the lungs of rabbits 15 days after inhalation of bacilli.

Shadows of Early Lesions.—How long might the disease have existed before it registered on the films?

FIG. 1.—Film taken prior to the administration of tuberculin subcutaneously.

There is no doubt but that the first proliferation of cells incident to the presence of bacilli might easily fail to register a sufficient shadow to be recognized. This condition may occasionally be inferred when râles develop in an area where before there were none and when subsequently shadows appear in the film at this site. Cavity formation has been observed from incipiency through the subsequent progressive stages until in some instances a whole lobe is excavated. In many of these cases there is observed a zone of localized haziness surrounding the cavity wall.

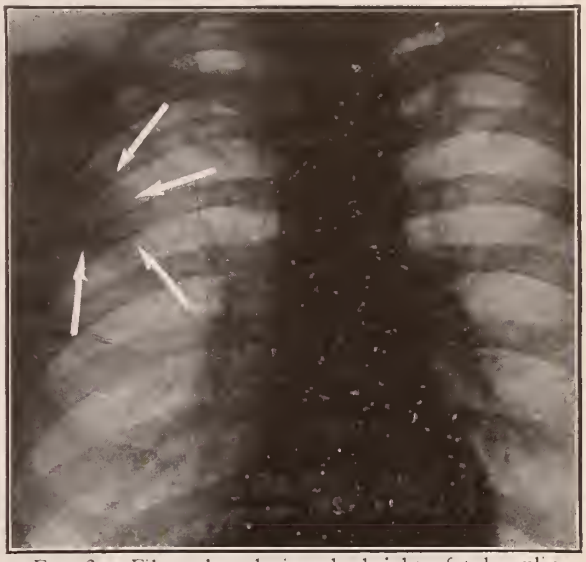


FIG. 2.—Film taken during the height of tuberculin reaction. Note increase of area of cloudiness.

Again may be observed the progression of cavity formation to the phase where it may cease to grow, followed by a slow or rapid dissolution of the so-called ring or annular shadow or area of rarefaction until little or no trace is left of the previously present cavity.

Very recently, serial films of certain cases have been taken as often as twice a week. In such instances, where specific foci are being watched, it has been possible to record very small changes taking place from time to time. The progression or retrogression of small cavities can be measured almost in millimeters. Where only one limited field is being studied, small stereoscopic or single films, size 5 x 7 inches or 6½ x 8½ inches, can be utilized to great advantage.

In a patient manifesting definite symptoms, the physician is enabled often to direct his attention to other organs when serial films exclude the lungs as being the seat of trouble.

The advantage of serial studies is evident only after rigid standards are followed and checked up with the clinical and laboratory data at hand. Then the study of the pulmonary disease offers many avenues of interesting and instructive investigation.—*H. L. Sampson, Röntgenographer, Trudeau Sanatorium.*

THE WEST VIRGINIA MEDICAL JOURNAL

JAMES R. BLOSS, *Editor-in-Chief* - - - - - - - - - Huntington

...ASSOCIATE EDITORS...

J. HOWARD ANDERSON, Marytown — WALTER E. VEST, Huntington — C. A. RAY, Charleston — HARRY M. HALL, Wheeling

THE JOURNAL issued on the first of each month. Entered as second-class matter January 1, 1926. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917. Authorized July 24, 1919.

Subscription to Members ..... $2.00 Per Year
Subscription to Non-Members ..... $3.50 Per Year
Single Copies ..... 50 Cents

OFFICERS

President:
H. M. HALL ..... Wheeling

First Vice-President:
B. F. BONE ..... Moundsville

Second Vice-President:
W. C. SWANN ..... Huntington

Third Vice-President:
J. A. DUFF ..... Martinsburg

Executive Secretary:
MR. JOE W. SAVAGE ..... Charleston

Treasurer:
T. MAXFIELD BARBER ..... Charleston

Delegates to A. M. A.:
JAMES R. BLOSS (1928-29) ..... Huntington
HENRI P. LINZ (1928) ..... Wheeling

Alternates:
A. A. SHAWKEY (1928-29) ..... Charleston
HARRY M. HALL (1928) ..... Wheeling

COUNCILLORS

Chairman of the Council for 1928:
R. H. DUNN ..... South Charleston

First District:
C. W. WADDELL (2-year term) ..... Fairmont
C. G. MORGAN (1-year term) ..... Moundsville

Second District:
C. H. MAXWELL (2-year term) ..... Morgantown
C. H. HALL (1-year term) ..... Elkins

Third District:
JOHN FOLK (2-year term) ..... Bridgeport
J. D. COLE (1-year term) ..... Clarksburg

Fourth District:
ROY BEN MILLER (2-year term) ..... Parkersburg
W. E. VEST (1-year term) ..... Huntington

Fifth District:
J. HOWARD ANDERSON (2-year term) ..... Marytown
H. G. STEELE (1-year term ..... Bluefield

Sixth District:
R. H. DUNN (2-year term) ..... South Charleston
H. A. WALKUP (1-year term) ..... Mt. Hope

¶ All original articles for THE JOURNAL must be made to it exclusively. Communications and items of general interest to the profession are invited from all parts of the state. Notices of deaths, removals from the state, changes of location, etc., are requested.

¶ Our readers are requested to send marked copies of local newspapers containing matters of interest to members of the medical profession. Name of sender should be given.

CONTRIBUTIONS TYPEWRITTEN

¶ Contract with present printer specifies all articles, communications, etc., MUST BE TYPED.

ADVERTISEMENTS

¶ Advertising forms will go to press not later than the tenth of each month. All advertisements must conform to the standard established by the Council of Pharmacy and Chemistry of the A. M. A.

WOMAN'S AUXILIARY

Mrs. R. V. Shanklin, Gary, President; Mrs. T. H. Harris, Parkersburg, vice-president; Mrs. W. C. Swann, Huntington, secretary; Mrs. W. D. Simmons, Slab Fork, treasurer.

Councillors

Mrs. C. G. Morgan, Moundsville, first district; Mrs. Ralph Maxwell, Morgantown, second district; Mrs. H. D. Price, Parkersburg, third district; Mrs. J. R. Bloss, Huntington, fourth district; Mrs. A. G. Rutherford, Welch, fifth district; Mrs. E. S. DePuy, Beckley, sixth district.

Delegates to Woman's Auxiliary of A. M. A.

Mrs. R. V. Shanklin, Gary; Mrs. B. S. Preston, Charleston. Alternates — Mrs. George Jeffers, Parkersburg; Mrs. W. B. Scherr, Morgantown.

STANDING COMMITTEES

Medical Defense Committee

C. G. Morgan, Moundsville, Chairman; H. A. Walkup, Mt. Hope; H. G. Steele, Bluefield.

Committee on Scientific Work

O. B. Biern, Huntington, chairman; G. H. Barksdale, Charleston; A. G. Rutherford, Welch.

Public Policy and Legislative Committee

R. A. Ireland, Charleston, chairman; R. H. Walker, Charleston; James McClung, Richwood; C. R. Ogden, Clarksburg, D. A. MacGregor, Wheeling.

Committee on Medical Education

John N. Simpson, Morgantown, chairman; W. T. Henshaw, Charleston; W. S. Fulton, Wheeling.

Committee on Professional Relations

John R. Shultz, Charleston, chairman, (5-year term); A. G. Rutherford, Welch, (2-year term); W. R. Goff, Parkersburg, (2-year term); Hugh G. Nicholson, Charleston, (3-year term); E. P. Smith, Fairmont, (4-year term)

Workman's Compensation Committee

W. A. MacMillan, Charleston, chairman; C. A. Ray, Charleston; John E. Cannaday, Charleston.

Committee on Public Health

David Littlejohn, Charleston, chairman; John Thames, Charleston; Will McLain, Wheeling.

Surgical Section

Robert King Buford, Charleston, chairman; B. I. Golden, Elkins.

Eye, Ear, Nose and Throat Section

I. D. Cole, Clarksburg, chairman; C. C. Jarvis, Clarksburg.

Hospital Association Officers

R. A. Ireland, Charleston, president; J. S. Turk, Wheeling, president-elect; B. I. Golden, Elkins, first vice-president; W. E. Vest, Huntington, second vice-president; Mr. Joe W. Savage, Charleston, secretary-treasurer.

PRESIDENT'S PAGE

"DR. PAUL A. LEWIS, pathologist and bacteriologist at the Rockefeller Institute, is dead of yellow fever in Brazil. He went there to find a better cure for the disease that killed him, studying yellow fever in men and monkeys at Bahia. Dr. Lewis will have no monument, only a few lines on some gravestone that will soon sink into the ground. It would be a pity to believe that there is no reward hereafter for a man so poorly appreciated on earth."

Arthur Brisbane wrote this on July 5, and, whatever his faults may be (running into technical error at times), he has, to us, seemed to understand very well what the medical profession aimed to accomplish. We take our surgeons and internists of great repute and, while they deserve it, make their names ring around the earth; the research man, who makes all things possible, is sadly neglected, even by us, let alone the public.

Any one who is arranging a program and includes a "research worker" on the list knows what to expect—the audience will not be there as to numbers. This is somewhat due to the manner in which these earnest, sincere men make up their papers. They are too "dry" and uninteresting. Dr. A. C. Ivy, of Chicago, was always an exception The day will come when charts with maximum and minimum curves of incidence, long food tables with calories and percentages, statistical figures with matters involved and intensely mathematical, will not be given by a speaker, either by slides or otherwise, to an audience. They are not absorbed, followed, or accepted by more than ten per cent of an audience. All medical meetings would go along more skillfully and with better results if these necessary, elaborate, and yet tiresome features were excluded. It is quite essential that they appear in the article when published, but it is a sad blunder too long tolerated to have long analyses cluttering up an otherwise brilliant paper. The end results in figures would be enough. The other is never mentally accepted, so why use it?

We as a profession should take Paul Lewis and make every school child familiar with his name and what he died for, and it would not be amiss to introduce a little practical christianity into Sunday schools and vigorously say that his is as near as any man can come to an imitation of Christ Himself. To die in battle you have company, a supposed cause, and a lot of glamor. To die in Brazil of yellow fever, more or less alone, is as near to a dark gray etching of a trio of figures pinioned to crosses as we will ever see.

The final thought in Brisbane's paragraphs is for those "weeping willows," the anti-vivisectionists. They care not, of course, for Paul Lewis. They may feel that he deserved his fate for some of their fancied ideas as to wrongs committeed on the monkeys. To them, whatever warm surges of human sympathy that seems continually to be flowing through their veins will be for the monkeys. Doubtless they will forward resolutions of condolence in the monkey dialect to those animals that survived, and some one among them, more wealthy than the rest, will endow a monument to the "Unknown Monkey" who was sacrificed for "scientific nonsense." But be assured of one thing: not one of them will journey to Brazil to deliver the message nor to erect the monument. Anti-vivisectionists invariably resolute from a safe place, protected by preventive medicine. Nevertheless, we, as doctors, should see that Paul Lewis gets no "little monument that will sink in the ground and his name be forgotten."

Harry M Hall

EDITORIAL

Cancer Control

Published in the May number of *Campaign Notes* of the American Society for the Control of Cancer is a very commendable article by Dr. J. C. Bloodgood on "Cancer as a Public Health Problem."

The proper function of a public health organization is not only to prevent disease but to prevent death by diseases which no known power can prevent. If cancer can be thus classed, surely it is a public health problem. Doctors and health officials understand the certain mortality of cancer, but getting knowledge over to the public is our great problem.

The possibility in the young and probability in the aged of cancer should be one of the first things to be considered in the history of any person who for any reason consults a doctor or public health official.

Easy eradication is our only known remedy. It is far better to remove an innocent growth than to take chances on certain death by delay. Every doctor and medical organization, state, county and municipal health department should engage in this work of saving the lives of cancer victims until some great mind has evolved a means of eradication. C. A. R.

Seven Rules of Caution

Hundreds of articles, editorials and resolutions have been published on the Cleveland Clinic tragedy since the disaster last May. Most of these articles have been messages of condolence to Dr. Crile and his staff of co-workers. Unquestionably, all of them have been appreciated. The Cleveland Clinic disaster has given us a fearful picture of the destruction of human life and has caused all of us to dwell upon the potent dangers that lurk in the storage of x-ray films. In this connection it is interesting to note a list of seven rules of caution published in November, 1928, in *Modern Hospital*. The list follows:

1. A metal can, having a self-closing spring-hinged cover and approved by the Underwriters' Laboratories, should be provided for all waste negatives and film scrap, and at no time should these be permitted to accumulate and lie around on tables, benches or floor.

2. Stocks of unexposed films should be kept at a minimum. Only a limited supply should be kept on hand at any one time.

3. In rooms where films are filed or handled there should be no flames or any other than standard electrical fixtures. The use of portable lights on extension cords should be prohibited. All open lamp bulbs should be protected from breakage by suitable guards. An approved hand fire-extinguisher should be in each room where films are handled. Doors of dark rooms and of other rooms should be arranged so as to make egress easy.

4. Film negatives should be filed as soon as possible in heavy manila envelopes, either singly or by case. These should be conveniently arranged so that from time to time useless negatives may be weeded out.

5. Film illuminators shall be so designed that the diffusing glass is not hot to the touch and there shall be no unnecessary display of film negatives in lighted illuminators. Negatives set up for viewing shall be confined to those actually being inspected.

6. Smoking shall be prohibited in rooms where films are stored, in developing rooms and in similar workrooms. "No Smoking" signs shall be posted in prominent places.

7. No films shall be stored within two feet of steam pipes, radiators, chimneys or other sources of heat.

Our Friends the Lawyers

Many occasions arise wherein our friends the lawyers, in a pleasant yet satirical way, refer to the medical profession as arbitrary, and they have even been known to refer to it as a "trust." Considering that no one knows better than the medical profession just what a cohesiveness spreads itself among the attorneys at law, this is pretty good. Therefore, with its hand over its mouth, the "medical trust" hides a little smile at the following from the Wheeling *News*:

"At the request of the Ohio County Bar Association, the business of the Intermediate court was suspended yesterday for the balance of the summer.

"The sole consideration in the adoption of this course, apparently, was the convenience of the lawyers. The court docket, crowded by cases carried over from the interrupted February term, threatened to keep them busy throughout the summer. They didn't want that.

"Whether adjournment of the term will inflict a hardship upon any defendant accused of crime, *The News* does not know. It does know, however, that the action illustrates the attitude which controls the operation of courts throughout the nation. There was no thought of whether a suspension of several weeks would inconvenience some one awaiting trial,

perhaps behind the bars of the county jail, or of whether it would better serve the ends of justice. It was just a question of whether it suited more members of the bar to stop than to continue. As a result, there may be, probably will be, another serious congestion when the fall term rolls 'round without justification for it.

"For some strange reason, lawyers seem to think courts are conducted for their particular benefit. And they manage to have them operated upon just about that basis. Who has not seen countless cases of litigants, court officers, jurors, witnesses, and others held up and inconvenienced at heavy public and individual expense, simply because some lawyer was not ready for trial? It happens at every term of practically every court in the country, and there seems to be little disposition upon the part of either bench or bar to do anything about it.

"Maybe there would be less of the court congestion of which we hear so much, less of the delay which is weakening the administration of justice in this country, were lawyers to consult their personal convenience less and the public welfare more in shaping their attitude toward courts and court procedure."

COUNTY SOCIETY NEWS

Mason County Organized

A new component society of the West Virginia State Medical Association was formed in Mason county on June 27, 1929. The organization meeting was held in Point Pleasant, at which time a constitution and by-laws were adopted and officers elected for the coming year.

Dr. C. W. Petty, of Hartford, was elected president of the new society; Dr. E. L. McElfresh, first vice-president; Dr. H. F. Bryant, of New Haven, second vice-president, and Dr. H. A. Barbee, of Point Pleasant, secretary-treasurer. Drs. R. W. Sayre, U. G. Arnett, and J. M. Fadeley, of Point Pleasant, were elected as the board of censors. The above-named officers constitute the charter members of the society.

The first scientific meeting of the Mason County Medical Society will be held next September, but the exact date for the meeting has not yet been selected. A committee was appointed on June 27 to work out plans for this meeting, and an excellent program is expected.

Plans are already under way to organize a second new society in Jackson county, with the idea in mind of later merging the two societies into one component group. The Mason county doctors are very enthusiastic over this plan, and they hope to have a Mason-Jackson society in existence before the end of the present year.

Grant-Hardy-Hampshire-Mineral

The regular meeting of the Grant-Hardy-Hampshire-Mineral County Medical Society was held at the new Century hotel, Romney, on the evening of July 12, 1929. The scientific program was presented by Dr. E. B. Martin, of Romney, with a paper on "Cystitis of the Aged," and by Dr. T. C. Giffin, of Keyser, who read a paper on and reported four cases of "Glandular Fever in Children."

This was a very interesting meeting and considerable enthusiasm was displayed. A good attendance turned out for the session. The G.-H.-H.-M. society was pleased to report a 100 per cent paid-up membership for 1929, with no delinquents.

T. C. GIFFIN, Secretary.

Hopemont Gathering

The medical societies of six counties gathered at the Hopemont Tuberculosis Sanitarium near Terra Alta on July 9 for one of the best scientific and social medical gatherings ever held in northern West Virginia. The scientific program was furnished by Dr. C. C. Yount and Dr. E. J. McCague, both of the University of Pittsburgh. Dr. Yount, a graduate of West Virginia University, read a paper on "Preventing Deformities," while Dr. McCague's paper was on "Renal Tuberculosis."

Dr. J. G. Pettit, superintendent of the Hopemont sanitarium, was host to the party following the scientific session. A chicken dinner was served, after which Dr. F. D. Fortney, of Newburg, president of the Preston County Medical Society, presided as toastmaster and called upon Dr. Pettit, Dr. T. Jud McBee of Morgantown, president of the Monongalia County Medical Society, Dr. L. H. Lewis of Kingwood, secretary of the Preston society, Dr. C. H. Maxwell and Dr. F. T. Scanlon of Morgantown, Dr. B. S. Rankin of Kingwood, Dr. D. C. Peck of Grafton, and Dr. E. E. Watson of Albright.

The county societies represented at the meeting included Preston, Monongalia, Barbour, Taylor, Randolph, and Marion. Following is a list of those in attendance:

Morgantown physicians attending: W. H. McGaw, C. B. Pride, C. E. Johnson, B. C. John,

William Madeira, J. N. Simpson, W. C. Moser, K. E. Smith, C. B. Wylie, B. M. Stout, C. F. Boyers, D. M. Post, E. R. Taylor, A. E. Taylor, E. B. Tucker, C. H. Maxwell, F. T. Scanlon, W. B. Scherr, C. C. Romine, S. F. Talbott, H. V. Talbott, H. V. King, Dorsey Brannon, T. Jud McBee, H. C. Powell, and G. R. Maxwell.

Preston county was represented by Drs. J. J. Willingham, Elta Mason, G. F. Evans, J. G. Pettit and F. D. Fortney, of Hopemont Sanitarium; W. F. Dailey and H. N. Moser, Terra Alta, W. H. Post and E. J. Wichterman, Masontown; D. J. Rudasill, R. D. Harman, B. S. Rankin and L. H. Lewis, Kingwood; E. D. Wise and M. H. Proudfoot, Rowlesburg; R. B. Talbott, Erwin B. B. Miller and H. C. Miller, Eglon, and E. E. Watson, Albright.

Marion county was represented by Dr. L. D. Howard; Taylor, by Dr. D. C. Peck and Dr. P. P. Warden; Barbour, by Dr. I. Smith, and Randolph, by Dr. Guy Michaels.

COMMUNICATIONS

The Grant-Hardy-Hampshire-Mineral Society

Editor, West Virginia Medical Journal:

On the seventeenth of April it was my privilege to attend a meeting of the Grand-Hardy-Hampshire-Mineral Medical Society at Piedmont. I think I have never met a more practical set of men in my medical experience. Most of their members are scattered over a wide area and usually they have to depend on their own resources for success. Consultants are hard to get, and most of them have to depend on their own ingenuity and skill and are thus broadened and strengthened in their own character and ability.

There was a good attendance at the meeting, considering the long distance that many of them had to come. I wonder how they can keep up their attendance and interest in the society when the members are so far apart? In many of the localities there is only one physician, and if he goes away the community is left without medical service in case of emergency. This society meets in the different towns in rotation. At this particular meeting the program was not extended, owing to the fact that it expected papers from without and the members had not prepared an extensive program.

These men are earnest, enthusiastic, and progressive. The society expects to have ten meetings during the year. I could not help but feel the contrast between this society and my own in Monongalia county. There are only three members out of forty-eight of Monongalia County Society but who can reach our meeting place in ten minutes from the time they leave their offices.

Some of the very best men of our State are in the Grant-Hardy-Hampshire-Mineral society, and there are no weaklings among them. I think I never saw a gathering of doctors with as much vim and energy as the men in this rural district have.

C. H. MAXWELL, Councillor.

ANNOUNCEMENTS

Goiter Research Award Offered

The Executive Council of the American Association for the Study of Goiter announces that a prize of three hundred dollars and a medal of honor will be awarded by the association to the author of the best essay based upon original research work on any phase of goiter, the prize to be presented at the association's annual meeting at Seattle, Washington, in September, 1930. Competing manuscripts must be in the hands of the corresponding secretary by July 4, 1930, so that the award committee will have sufficient time to thoroughly examine all data before making the award. Full particulars of other regulations governing details of the offer will be furnished on application to J. R. Yung, corresponding secretary, Rose Dispensary Building, Terra Haute, Indiana.

Shock-Proof X-Ray

Simplifications in design and improved controls have enabled the röntgenologist to constantly improve the quality of his work and obtain uniformly satisfactory results through the standardized technique which these improvements have made possible.

Shortly after the CDX was placed on the market the Victor engineering and designing organization, under the leadership of Mr. J. B. Wantz, started work on the development of a shock-proof type of x-ray unit for the use of the röntgenologists in the medical x-ray field.

The development of the shock-proof x-ray unit is considered as probably the most important contribution to x-ray science since the advent of the Coolidge tube. The knowledge and experience gained during these many years are reflected in the design of this new apparatus. Nothing has been left undone to bring to a realization the finest piece of workmanship, in justice to the important rôle to which it is believed this apparatus will be assigned

in future radiology. It is dedicated to that body of specialists, the röntgenologists, who have so immeasurably contributed to the advancement of medical science.

Virginia Hospital Head

Dr. J. L. McElroy, following several months given to visiting medical centers of Europe, has become superintendent of the hospitals of the Medical College of Virginia, Richmond. These are the Memorial, the Dooley, and the St. Philip hospitals. The Crippled Children's Hospital is affiliated as the orthopedic department for white children.

PUBLIC HEALTH

Survey of Thyroid Enlargement

The results of a thyroid survey recently made by the U. S. Public Health Service in Tennessee have been announced. This survey included 9,073 white boys, 11,120 white girls, 1,739 colored boys, and 3,196 colored girls, attending the senior and junior high schools and upper grades of the grammar schools in 40 localities. A total of 4,876 thyroid enlargements of all degrees, representing a percentage of 19.4, was noted among the 25,148 children examined.

Thyroid enlargements of all degrees prevailed among the white boys to the extent of 9.5 per cent and among the white girls to the extent of 23.5 per cent. Among the 9,073 white boys examined, 90.5 per cent of the thyroids were classified as normal, 7.7 per cent as very slightly enlarged, 1.5 per cent as slightly enlarged, and 0.2 per cent as adenomatous. There were but 4 moderate enlargements, a percentage of 0.04. Among the 11,120 white girls examined, 76.5 per cent were regarded as normal, 15.1 per cent as very slightly enlarged, 7.2 per cent as slightly enlarged, and 0.56 per cent as moderately enlarged.

Among the 1,759 colored boys examined, 84.6 per cent of the thyroids were normal, 12.2 per cent were very slightly enlarged, and 2.6 per cent were slightly enlarged . Only three moderately sized enlargements, a percentage of 0.17, were noted. Higher percentages of thyroid enlargements were recorded among the 2,196 colored girls examined in 33 localities. In this group 64.5 per cent of the thyroids were normal, 19.5 per cent were very slightly enlarged, 13.7 per cent were slightly enlarged, 1.7 per cent were moderately enlarged, and 0.5 per cent were adenomatous in character. The existence of one marked thyroid enlargement was also recorded. Endemic goiter is more frequently encountered among the colored than among the white children in Tennessee.

Nutritional and economic factors may be responsible for the greater incidence of endemic goiter among the colored children. The incidence of endemic goiter is greater in eastern Tennessee than in either the central or western portions of the state. In Tennessee, as in other states surveyed, thyroid enlargements decrease in number among the boys after 14 years of age. Among the white girls in Tennessee there is a slight decline in goiter incidence after the age of 15. However, among the colored girls there is a maintained increase of incidence up to the age of 18 years.

There appears to be no relationship between the amount of endemic goiter and the sources, treatment, and ultimate safety of public water supplies in Tennessee. There is a slightly larger incidence of endemic goiter among the users of chlorinated drinking water in Tennessee than among the consumers of unchlorinated water. The order of goiter incidence, from the highest to the lowest, in six states and one city surveyed by similar methods is as follows: Minnesota, Cincinnati (colored), Cincinnati (white), Oregon, Tennessee (colored), Tennessee (white), Massachusetts, and Connecticut.

There appears to be no relationship between geologic formations in Tennessee and the varying incidence of endemic goiter. Toxic goiters prevail to a sufficient extent among school teachers to warrant preventive measures and skilled treatment.

Public Health Function

If civilization is to continue to advance, the public health service must be made the first function of the state, declares Dr. William J. Mayo in an article in *Hygeia*.

People as a whole are more interested in their individual affairs than in movements to enforce public health measures, and unless sickness actually exists in their own families, or unless they are in the midst of a strong epidemic, they pay little attention to such matters, Dr. Mayo says. The public may always be enlisted to remedy existing evil; to prevent some future evil is less appealing.

But the individual is an integral part of society and is endangered by the contagious diseases of any other individual, Dr. Mayo continues. If the citizen would keep well he must see that his community as a whole keeps well.

The public is badly advised, voiceless and often powerless against the opposition of interests that might be adversely affected by health measures advocated, particularly the laws affecting health. At times it actually appears that those who profit by the physical and social diseases of man believe they have a vested right in the continuation of the evil conditions that produce them.

"America has been wasteful of her timber and other great natural resources, but the greatest waste of all has been that of human life and health," Dr. Mayo concludes. "If we are to continue as leaders of the world's civilization, we must have legislation that will provide money and power to prevent and control disease, money to place force behind the pure food laws, and laws that will remove the public health service from local politics."

Decline in Birth Rate

A smaller number of births were recorded in West Virginia in 1928 than in any year since 1923. There were 1,467 fewer births in the state last year than during the previous year. These facts were disclosed by Dr. Carl F. Raver, vital statistician of the state health department, with whose division are recorded the births, deaths, and marriages in the state. Dr. Raver stated that in 1927 there were 44,857 living births reported, while in 1928 there were but 43,390.

No reason for this marked decline was given by Dr. Raver, but he pointed out the fact that there was a dropping off in the marriages reported—19,287 being the record for 1927 and 18,361 for last year, making a decline of 926.

According to the records at the state health department, the youngest white mother in the state last year was 13 years of age, and the youngest negro mother was 12, while the oldest white mother was 52 and the oldest negro mother gave her age as 50. By far the largest majority of white mothers were 21 years of age and the negro mothers were nineteen.

That some of the families in the state hold to the Roosevelt doctrine was shown, in that one mother last year gave birth to her twenty-third living child and one to her twenty-fourth. It is not known, however, how many of these children lived to grow up.

The records show that, of the total living births reported, 1,478 children were born out of wedlock in 1928, while seven per cent of the stillbirths were of children born to unmarried mothers.

While the births in the state showed a decrease, the deaths showed an increase of 521; those reported for 1927 number 16,990, and 17,511 in 1928. To the epidemic of influenza which swept the country the latter part of last year can be attributed a large part of this increase in deaths.

Birth-Registration Area

The admission of Nevada to the United States birth-registration area was recently announced by the bureau of the census, the bureau tests having shown that birth-registration in Nevada is now at least 90 per cent complete. The only states not yet included in the birth-registration area are New Mexico, South Dakota, and Texas.

West Virginia was admitted to the registration area in 1925, when federal representatives found that 90 per cent of all births and deaths were being reported to the division of vital statistics of the state health department.

The Malaria Problem

Malaria presents a complicated problem about which experts fall out. When so many factors are to be reckoned with, there is a temptation either to despair of doing very much or to put one's faith largely in a single method. Thus one group of malariologists believes that malaria tends to disappear automatically in communities that reach a fairly high economic, social, and cultural level. A second theory holds that for most of the malaria a relatively small number of house-loving, well-protected, long-lived and lazy anophelines are to blame. Catching and killing these mosquitoes is, therefore, the thing to do. A third idea is that major drainage operations will put an end to serious breeding of malaria mosquitoes. A fourth group insists that systematic and compulsory giving of quinine to whole communities is the most important measure.

Still another plan, which the Rockefeller Foundation has tested and shown to be effective in a number of suitable areas, is to discover significant breeding-places and either eliminate these by minor drainage and filling of hollows, or prevent the development of mosquito larvæ into adult insects by the use of larva-eating fish, or by suffocating or poisoning the "wigglers" with oil or paris green. At a malaria conference held at Geneva in June, 1928, under the auspices of the health organization of the League of Nations, all these and other ideas about combating the disease were frankly and fully

discussed. While it would be too much to say that an entire agreement was reached, progress toward a more inclusive program of malaria research and control was undoubtedly made.

One thing, at any rate, is certain. Malaria is a local problem in the sense that, before one can hope for success in the control of it, there must be a careful survey of the actual situation with respect to geological formation, temperature, rainfall, the particular mosquitoes which are guilty, their breeding-places, habits of life, range of flight, food preferences, and many other things. Then, too, the blood of adults and children must be examined to detect the malaria parasite. Spleens, which in confirmed cases of malaria show enlargement, should also be examined as one index of the prevalence and intensity of the disease. All these conditions having been determined, a program of control, adapted to the specific situation, may be decided upon and put into effect. During 1928 the Rockefeller Foundation assisted in an especially complete survey of this kind at Maracay, not far from Carácas, in Venezuela.

Twenty foreign governments, from the West Indies through Europe to the Philippines, were assisted in 1928 in some form of anti-malaria measures or research. In the United States contributions were made to the malaria budgets of fifteen countries in six southern states. Assistance in malaria field studies or research was given at stations in North Carolina and Alabama, and at the Johns Hopkins University and the University of Chicago. Practical training for malariologists was provided at malaria stations in Italy, Corsica, and Spain.

BOOK REVIEWS

The Treatment of Fractures

"THE TREATMENT OF FRACTURES," by Lorenz Bohler, M.D., Chief Surgeon and Director, Vienna Accident Hospital. Publishers: Wilhelm Mandrich, Vienna.

This is a concise, well-organized, well-written volume covering the entire field of fractures in such a manner that the physician who has it at hand can treat intelligently and efficiently any fracture that may be presented to him. In the preface the author states a fact that must often have been observed by every physician who has had occasion to treat fractures, namely, that the treatment of fractures is in many instances unsatisfactory. The purpose of the study which preceded the publication of this volume was, therefore, to determine the cause of such unsatisfactory treatment and to present to the profession the remedies, insofar as they could be found, for these therapeutic shortcomings. As a result of Dr. Bohler's investigations he comes to the conclusion that most of our failures depend upon three things: (1) Prevailing anatomical misconceptions; (2) lack of organization, and (3) faulty technique in the application of knowledge that is, in itself, all right.

The book is divided into two parts, General and Special, the General part dealing with the anatomical and physiological considerations which apply to the treatment of every fracture, and the Special part giving the detailed method of treatment of every fracture that one will encounter. The author states that he has been impressed repeatedly with the fact that treatment was suffering from lack of the necessary materials or from their improper preparation. For this reason he gives, in the Special part, detailed directions for the preparation of all materials and for their proper use, mentioning such details as the number of assistants required for each procedure and giving their several duties. The various operations are made clear by the use of a large number of photographs of the actual procedures.

There are a few points in the book which are of especial interest, since they are more or less different from what one usually sees in our orthopedic services. One practice is the use of the non-padded plaster cast and the early mobilization of the patient. Fractures of the femur are treated by the application of a non-padded spica cast, and the patient is allowed to walk with crutches three days after the application of the cast. There is considerable space devoted to the discussion of the relative merits of the padded and the non-padded cast, and, although our space does not permit a repetition of the points considered, we can say, at least, that the maligned non-padded cast has an able champion in the author of this book.

The second point of interest is the length of time allowed by Dr. Bohler before the removal of the cast. He states that transverse fractures in the middle third of the tibia are never solid enough to justify the removal of the cast in six weeks, but require from ten to twenty weeks, after which the cast can be removed and the patient allowed to bear the full weight of the body on the leg without fear of further trouble.

Finally, the author is entirely opposed to open reduction and to the use of metal plates. He considers that there are only a few fractures, such as fractures through joints with a torsion of part of the

joint, fractures with a diastasis, and the separation of certain apophyses, which justify the use of the open method. However, it should be noted that when Bohler wants traction he does not compromsie or use inadequate methods, and this probably accounts for his experience that open reductions are almost never necessary. The use of skeletal traction is so frequent that it is truly astounding to one who has been accustomed to almost universal employment of skin traction or else open reduction.

On the whole, the treatment advocated in this volume strikes us as much more physiological than that in most of the cases which we have observed, and the advocation of local, brachial block, and spinal anesthesia combined with the positive and foolproof skeletal traction and the early mobility of the patient as a whole seem to be the best methods of therapeutic approach that we have at hand at the present time. The book is the best that we have seen for the general practitioner, and it will certainly add considerably to the armamentarium of the orthopedist. A. S. L.

OBITUARY

Perry Bosworth, M.D.

Dr. Perry Bosworth, of Huttonsville, died in the City hospital at Elkins at 7:30 o'clock on June 25 at the age of 62 years. He had suffered for some time from a complication of diseases. Funeral services were held at Huttonsville on June 27.

Dr. Bosworth was a son of George Bosworth and a grandson of Dr. Squire Bosworth of Philippi, W. Va. He was also a nephew of Dr. J. W. Bosworth of Philippi. He is survived by his wife and two brothers, Dr. A. S. Bosworth of Elkins and Dr. J. L. Bosworth of Mill Creek.

FROM OTHER JOURNALS

Amenorrhea in Young Women

An ovarian hormone which can be standardized has been available now for several years. The extract of Allen and Doisy[1] of the University of Missouri has the measurable effect of inducing heat or estrus in a spayed mouse, and the quantity necessary to produce this effect in a mouse of a given size is pharmacologically determined, and is called a mouse unit.

This substance ranks already among the few gland extracts of known physiological effect on animals. It has rather pronounced physiological and psychic effects upon women, though the nature and extent of these is little understood. Its induction of estrus in animals has been largely studied, but the relation of menstruation of human beings to estrus in animals is still unknown. There is no very strong *à priori* reason to believe that a drug which will induce estrus in a mouse will induce menstruation in a woman.

A number of women students at the University of Minnesota were examined and their basal metabolism was found to be 15 per cent below the standard normal.[2] Whether this is in any way related to the climatic and soil conditions which class Minnesota among the goiter states is not known. A number of cases of amenorrhea were observed, and all cases fell in the group with low basal metabolism. It was determined to treat some of them by injections of the ovarian hormone of Allen and Doisy. A nineteen-year-old woman who had not menstruated for five months was given a number of injections of the extract. In three weeks she menstruated for six days. Another woman of twenty-two who had had amenorrhea for five years received two series of injections. Five days after the last, her menses appeared and lasted two days.

These are merely further proofs of the specific activity of this drug. That it is advisable so to induce menstruation in young women is highly questionable. Perhaps thyroid medication, perhaps merely improvement of the general condition by rest, diet, and other measures, would have been better treatment. However, physicians using a new drug always confer a favor upon the medical profession by accurate observation and reporting of its effects.

REFERENCES

1. Allen, Edgar: and Doisy, E. A.: An Ovarian Hormone. *J. A. M. A.*, 81:819, 1923.

2. McClendon, J. F., Burr, George, and Wildebush, F. F.: Induction of Menstruation in Women by the Use of Ovarian Hormone. *Proc. Soc. Exper. Biol. and Med.*, 26:430, March, 1929.

—*Southern Medical Journal.*

Disabling Sickness Among Industrial Employees

Statistics as to mortality rate in any given community are accessible and easily studied, yielding, of course, a tremendous amount of valuable information. On the other hand, the phase of statistics which has not been gone into with any thoroughness is the study of disabling illnesses among workers in general industry. These statistics would be, if carefully and thoroughly compiled, of tremendous influence, because they might lead to preventive measures which would obviate the loss of time through illness.

The Public Health Service has been conducting such a study in the last few years. It is interesting to note that respiratory diseases cause 41.8 per cent of disabling illnesses; digestive diseases 13.7 per cent, and non-industrial accidents 10 per cent. These three groups represent, then, practically two thirds of disabling illnesses. In the respiratory group influenza and grippe accounted for nearly one half, in a seven-year period, of all the respiratory diseases. Diseases of the stomach, appendicitis and enteritis, as well as hernia, were the most frequent numerically of the digestive diseases. Relatively high up in the statistics as a cause of disability was rheumatism.

It is of some interest to note that disabilities longer than eight days were fifty per cent higher among female than among male employees; that a low sickness rate was found among employees of iron and steel industries, although pneumonia was considered higher in this particular industry than the other industries represented in the statistics, and that the seasonal peaks of sickness were determined largely by the frequency of respiratory diseases, although the non-respiratory diseases as a group all showed greater prevalence in winter and early spring than summer and autumn.—*New Orleans Medical and Surgical Journal.*

Potassium Permanganate

In the May issue of the *Annals of Internal Medicine*, published by The American College of Physicians, Dr. John L. Chester, of Detroit, Mich., reports on a series of cases in which he has had very satisfactory results through the employment of potassium permanganate. Using a standard solution—two grains of the permanganate to one and one half pints of warm, sterile water, injected rectally by means of a funnel and catheter, the patient lying on his left side, and with the intention of the fluid being retained. The dosage was from 3 to 5 ounces, given every 3 or 4 hours, for a period of from 8 to 10 days.

At Providence Hospital, Detroit, Dr. Chester's initial exposition of the drug was on 23 cases of lobar and bronchopneumonia. He claims the death rate was exceptionally low—there were but two deaths. His observations lead him to declare that respiration, temperature, and pulse rate consistently became normal in from 36 to 72 hours, and that convalescence was more rapid and less exhaustive than is usually observed under similar conditions treated by more orthodox methods. At Eloise Hospital, maintained by the local poor commission, 20 severe cases were selected at random. Ten of these were treated by other than the potassium permanganate, and all died. The remaining ten were given varying doses of the solution, and 50 per cent of them went on to surprising recovery. These patients were all of the homeless, indigent type, most of them were admittedly chronic alcoholics, and nearly all had heart complications of long standing. Their vitality and powers of resistance had been reduced to the lowest ebb. Practically 100 per cent mortality had been the rule under similar conditions in the past by other methods of treatment. Dr. Chester considers the Eloise cases the acid test.

There is apparently no record of the exposition of this treatment in American medical literature. It is an English importation. In 1924 it was first used in pneumonic conditions, the *British Medical Journal* of March 7, 1925, and again on March 12, 1927, containing reports on the work done by Drs. Nott and Roche. It is noteworthy to remark that the results obtained by Dr. Chester practically duplicate in success the earlier English results.

Not the least interesting part of Dr. Chester's paper are his concise case histories and progress notes. In addition, he reviews the chemical action of the drug, explains the method of the preparation of the solution, and outlines the best modes of administration. He makes a plea for further investigation of the therapy by interested clinicians to the end that a directed verdict may be obtained whether or not the drug has proved specific action against the micro-organisms of pneumonia.—*Nebraska State Medical Journal.*

Curability of Tuberculosis

Doubt of the curability of tuberculosis dies hard in the minds of many very competent and studious physicians. Some others, perhaps because they are naturally more "faithful," have swung altogether too far in the other direction and display an unwarrantable faith in its curability even with inadequate therapy. To each class, a study of the experience of the Metropolitan Life Insurance Company should be illuminating.

This company maintains a more or less ideal sanatorium for its tuberculous employees. A medical examination upon employment, followed by close medical surveillance, presents practically ideal opportunities for early discovery, early treatment, and thence in due time to replacement in suitable, prop-

erly supervised employment. They do have cases in advanced stages on admission, however.

They find that their cases discharged alive from the sanatoria show a mortality more than three and one-half times that of the general staff. To most of us that must seem "pretty good," but certainly nothing to make us careless of the everlasting seriousness of the disease.

It is interesting to note that male ex-patients have a better subsequent mortality and employment record than female ex-patients. Most encouraging is the testimony that male patients, incipient on admission, showed a subsequent normal mortality.

Tuberculosis is always a serious disease, never a hopeless one, and, discovered early, treated promptly and efficiently over a long period, is very positively a *curable disease.—Wisconsin Medical Journal.*

Pre-School Examination

Three years ago certain physicians in Saint Paul, numbering for the most part the pediatricians of the city, were prevailed upon to examine children of pre-school age at the special spring and fall clinics conducted at the various city schools. They have continued to conduct the examinations free of charge until this spring.

There has been a growing feeling among physicians in general that they are called upon to furnish free services for a variety of causes, which, although very worthy, should not be classed as charity. There has been an increased realization of the importance of periodic health examinations and the child of pre-school age doubtless should have a periodic examination as well as the infant or child of school age. It was doubtless to further the idea in the lay mind that these examinations were conducted *gratis.*

A committee of the local medical society recently investigated the matter and recommended that pre-school examinations in the future in Saint Paul be conducted by private physicians except in such instances where parents are not able to afford such services, in which case the children should be taken to the free dispensaries or Baby Welfare Clinic.

Such action we believe to be fully justified. In the first place, examinations of children in large groups at school buildings are likely to be less satisfactory to physician and parent alike as compared with those conducted in the office or dispensary. Secondly, there is no good reason why a physician should donate his services to individuals who can afford to pay a fee for such an examination.—*Minnesota Medicine.*

Why Frauds Thrive

J. E. Gard, an old resident of Elizabeth City, has seen his picture in the daily newspapers of Elizabeth City and Norfolk. Under his photograph appears a wonderful testimonial to the curative powers of a medical nostrum called Samas. The public is led to believe that this kindly old man who is overweight and who has been a sufferer from rheumatism for years has been suddenly cured by Samas. There's his picture and the testimonial.

But J. E. Gard, who can't write his name, tells those who ask him that he never took a dose of Samas in his life and that he still has his rheumatism. The none too clever representative of the Samas company simply gave him a bottle of medicine, paid for having his picture taken, gave him one of the pictures and got him to make his mark on a piece of paper that he didn't even take the trouble to read.

The world is full of simple, credulous folk like Mr. Gard, and because their number is legion they provide great pickings for religious and medical quacks. Through their gullibility is the reputation of most medical frauds built up.

Little headway is made against the patent medicine evil in America, because it is supported by respectable druggists and respectable newspapers for profit. The Standard Pharmacy in Elizabeth City lends its name to the Samas fraud for profit. The *Daily Advance*, the *Virginian-Pilot* and the *Ledger-Dispatch*, three daily newspapers read in this city, lend their columns to Samas and its fake testimonials for the dirty profits they make out of it. And with such respectable backing Samas and kindred frauds will continue to thrive.—Editorial, *The Independent*, Elizabeth City, N. C.; reprinted from *Southern Medicine and Surgery.*

Preparation of Medical Papers

In his inaugural address at the eighty-third annual meeting of the Ohio State Medical Association, Dr. Albert H. Freiberg, Cincinnati, president of the state association, urged Ohio physicians to devote more attention to preparation of scientific papers, both for presentation before county society meetings and for publication in medical journals. He emphasized the great benefits derived by the author in digging out material for essays and expressed the hope that county societies would help in stimulating this activity among members of the state association.

Some suggestions pertinent to this same subject were offered some time ago by Dr. Morris Fishbein,

editor of *The Journal of the American Medical Association.*

Dr. Fishbein pointed out some of the reasons why so many fail to land their essays in high-class medical journals and some of the common faults of present-day authors on scientific topics. Three reasons he gave why many have their manuscripts rejected by the better journals are:

1. The author has not selected the proper medium for publication nor considered the relation of his article to the nature of the medium.

2. The author has been too hasty in assembling his material and has failed to complete his work.

3. Manuscripts prepared in the first place to be read before medical societies have not been re-prepared for publication, with conclusions and a summary so they can be digested rapidly by the reader.

Dr. Fishbein, in callng attention to some of the mistakes made by authors, stated that in his opinion much material is assembled without the same systematic care that is used in surgical procedures; too many writers lose sight of facts in an effort to make their product dramatic; case reports are often too lengthy or too brief; abbreviations are used too often, making the essay incoherent; too many authors pick their title first, instead of writing the paper and then choosing the title; medical jargon and slang is too frequently used, and many make a good essay a bad one by striving to use fancy writing.

There is much merit in Dr. Freiberg's plea for a re-birth on the part of the medical profession in Ohio to write and devote more of its time to literary pursuits. However, it would seem foolish for much effort to be exerted along this line unless the papers are carefully and thoughtfully prepared. Perhaps Dr. Fishbein's tips may be helpful to those who are thinking of following the excellent advice of the state association president.—*Ohio State Medical Journal.*

Comment on Cancer

Generally, I think, mistakes arise from one of two causes: The first is imperfect examination, which may be the fault of the patient or the doctor. The patient, for various reasons, may refuse to be thoroughly examined, or the doctor may continue to prescribe for his patient without attempting any real examination. He may, for instance, give treatment for "piles" without examining the rectum, or give medicine for abdominal pain without inspecting the abdomen. The other fruitful source of error is want of thought—failure to attain, by a careful summing up of symptoms, the clear perspective which would lead to an immediate diagnosis.

Unfortunately, there is no royal road to a diagnosis of cancer—no short cut, as there is in the case of syphilis. But we have many valuable aids to diagnosis, both bedside and laboratory. In the former category are such instruments as the proctoscope, the sigmoidoscope, and the cystoscope, which are used far too rarely by practitioners, though in many cases *they are easy to use, easy to maintain, and most invaluable in the information they give.*

In the latter category are tests for occult blood in the stools, or for free acid in the stomach. But it is most important to remember that these are only aids; they must never be considered apart from their context—the patient. We must guard ourselves against the danger of getting lost in a laboratory maze; above all, we must not attach undue importance to negative findings, especially to those of the x-ray examination. One often finds that both patient and doctor are lulled into a feeling of security by a radiologist's report that there is nothing abnormal to be seen, which is wrongly taken to mean that nothing abnormal is present.

The subject of early diagnosis embraces a consideration of the preventive treatment of cancer by the early detection and prompt treatment of conditions that we know to be precancerous. I still often see patients with warts of the lip and tongue, papillomas of the bladder, small rodent ulcers of the face or small tumors of the breast, who have been told that they need not bother about them unless they become troublesome. By the time such things become troublesome they are troublesome, indeed.—CECIL ROWNTREE in *The British Medical Journal,* May 4, 1929.

Ruptured Uterus

A. M. Mendenhall, Indianapolis (*Journal A. M. A.*, April 20, 1929), asserts that solution of pituitary is a valuable drug for postpartum hemorrhage. It is probably safe in the third stage of labor. It is probably safe in the induction of labor if used cautiously and in properly chosen cases. It is never safe in the first stage of labor. It is rarely if ever safe in the second stage of labor. Its chief value is to the accoucheur instead of to the mother or the baby. Other obstetric procedures are nearly always safer. There can be no rule as to the treatment of ruptured uterus, but the attendant must remember that conservatism may save many patients when more radical procedures may prove fatal.

GENERAL NEWS

CONTRACT PRACTICE

By HARRY M. HALL, M.D.
Wheeling, W. Va.

It might just as well be stated in the beginning that any doctor in the state of West Virginia who is not taking the time to contribute his part in thinking over the mighty changes that are going on in the medical profession at large is merely weakening the whole medical structure, and that deterioration of morale will in the end be his own individual undoing. We attempt to be no alarmist, but the fact is that no one can shunt this responsibility over onto officers of societies or so-called leaders or any one else, but each one, wherever he is, must be prepared on short notice for some quick action.

While we have been accepting all the various changes, attacks, inroads, innovations, criticisms and malicious analyses of our calling with a proud, indifferent and almost pathetic dignity, we are coming out to the point where we will either have to fight—*fight* is the word—or else be made over with a thoroughness that will be so complete that we will not recognize ourselves on the final survey. We persist in thinking we are immune from drastic change and so solidly placed that nothing can for very long make any radical departure in our affairs; so we sit, complacently idle as to our place in the sun, and trust in some kind of a Providence to intervene and make right *right*—come what may.

"Lift not your hands to it for help, for it as impotently moves as you or I." The average doctor today is caught, like the victim in Poe's celebrated story, between the four walls of a big room, and the four walls are drawing in closer together all the time. One of these walls is contract practice; another is group practice vîa a large hospital; still another is interference from the laity, while the final one is state medicine. Pick up a newspaper or a modern-living magazine and, coupled with what you hear from a number of speakers, decide for yourself.

And the reason given for the existence of all of them is the so-called economics of our day and hour. Suddenly it seems the individual doctor, whoever he is and wherever he is, has become a fractional part alone in the energetic factor that must decide on the status of the prevailing health of any single individual. If any of us counted on remaining aloof in a stubborn insistence, he has overlooked the spirit of the hour which crowds him into a socialism with his brother practitioners which, if carried out to its logical conclusion, will eventually make a single decision by a single doctor an obsolete and unheard-of thing.

There is no one so poor as to do reverence to the individual doctor any more. All the extended articles one reads, coming from the higher critics of the medical profession, contain attacks on the harrassed, hurrying, single practitioner. He takes no time to study. He gives no one a complete, satisfactory examination. He is not away betimes, keeping up on his profession. He depends on knowing what the constitutions of his patients are like, because he is their friend, and heaven knows what may develop while this slovenly inspection proceeds. Considering the wide range of disease, the estimate is made he would be lucky if he recognized ten per cent of it when he saw it. Not the least of his duties is picking out which specialist to send a patient to, if he is not too narrow to do such a procedure, and, in view of the fast-increasing opportunities, it becames nearly as hazardous a feat to select the right consultant as it would be to diagnose the disease by the exacting name in the first place; so that it is hoped, doubtless by some, a doctor of unimpeachable eminence (not alone, of course), surrounded by a list of collaborators, will issue a textbook through one of the leading publishers in ten volumes with index on "How to Know to What Specialist to Refer a Patient with Certain Described Symptoms."

There was a time when a contract physician and surgeon thought he was an individualist. In a way he reigned over some 200 to 500 miners or cotton-mill workers and they did what he told them. Gone is the day. We have lately had it presented to us in Wheeling, in a way that is by no means new or novel elsewhere but which was so to us, a scheme whereby the men in each small town worked for something like $250 or thereabouts a month, and when anything unusual develops it goes to a consultant, not necessarily under contract, but nominally so, and always the same one, and he decides on the proper expert service. This makes what amounts in the long run to a contract group practice. Over this all one man presides, and over the one man is a powerful corporation which has the same loving admiration for the average medical association as the old railroad magnate who is supposed to have said "The public be damned!" We have nothing particular to say about the quality of medical service except that the named consultants were men of worth and standing, but any one who tries to talk to us and argue that this is not taking the direction of medical practice away from the medical pro-

fession and putting it into the hands of a corporation will find an indifferent, not to say cynical and altogether doubting, listener.

When this plan was described (and we fancy, by some means or other, it will go through, because medicine is at heart afraid of Big Business), there was what is described often in the literary classics as a general "hue and cry" and the announcer was booked for a lynching, notwithstanding statistics show lynchings, like general practitioners, are becoming obsolete. After this huing and crying an ominous calm prevailed. Silence brings its heavy coverings over the silver tongues of speech. But not for long. The pot began to call the kettle black, and, to mix a metaphor, only one or two escaped from the burning building. The holder of a pass on a railroad called out in vain as he tried to come down the fire escape, but he died with the rest. That's where it all is today. There is where it will always be until it is threshed out, defined, clarified. There is where it will always gyrate around and around until a few courageous men meet the issue and settle it one way or another. As it is, a man who is accused of engineering an unfair contract in the medical profession goes along the jury-box like the culprit accused of rape and whispers, "Here's where we men have got to stand together."

All contracts are not alike any more than all crimes are alike or all virtues are equally commendable. Yet, as it stands now, a man who is deeply set on doing a manifestly unjust piece of contract work can yell over the table to the holder of a railroad pass and say, "Wash your own linen first before you talk to me." The holders of a railroad pass are offenders technically, and we believe it would have been better had they never been; but to call the man who has one an equal designer with the man of supremely selfish motives is like saying a man who inadvertently parks by a fireplug is on the same plane with a hit-and-run driver who has killed a child.

So, then, it is said that not less than twenty-five per cent of all doctors in West Virginia are in some kind of major contract practice. We heard an observer remark, the other day, that every man of any prominence in West Virginia has had, is holding, or will obtain if he can, a contract of some kind or other. This begins with a railroad pass and may run the gamut up to a man who not only practically holds the sway over the medical destinies of a group of layment but also over doctors and hospitals, and actually extends to a burial organization. This cynic went further to state that those who have no contract would gladly take one if they could get one that would suit their fancies, on the old theory, no doubt held by so many, that "every woman has her price." To men of some minds there is evidently no real professional honesty among us, and the suggestion that there is any real fellowship existing between doctors that even recalled the Golden Rule is unthinkable, for, say they, "Give any doctor a chance to obtain a real bonanza at the expense of his professional friends and see if he takes it or not." Finally, according to the cynic, any one who comes out boldly in the discussion of professional relations as they really are, or on the "fool stepping in where angels fear to tread" theory essays to discuss contract practice, has undertaken by the very action to sing his "swan song." Dead he is professionally, politically, socially, and perhaps ethically—although the last may be the very reason he endeavored to bring it all to the fore.

The answer is that death and swan songs come sooner or later, even to the archbishop; and what man, wise or foolish though he be, may say one way or the other is soon forgotten, if ever read? Why say anything, then? Because this incident at Wheeling, although of no great importance in itself, stirred up the feelings of two separate state organizations, West Virginia and Ohio. The aforesaid plan of contract practice was going to be carried out in Ohio, but directed from Wheeling; the honorable gentlemen from Ohio setting forth that no such higher forms of contracted practice had been spread out within their midst, and they would see that it did not happen. We believe very honestly that all forms of contract practice have appeared in their midst, yet, nevertheless, they have a perfect right to begin at some point to eliminate them, even if it is West Virginia doctors they first obstruct. This matter of states is of no importance; nor have we any desire to enlarge on the fact a river made any difference. Doubtless it did not.

What we point out that is of all importance is the absolute chaos in which contract practice is floundering. Because it was not clearly defined in the beginning by the American Medical Association or any other medical association, including our own, it has been reaching out until it is clearly out of all definition now, and almost anybody can start almost anything and hide behind it as just regular contract practice.

Regular contract practice, if any, can be defined as near clarity as possible by setting forth that it is

the use of regularly qualified medical men to take care of industrial groups wherever it would be impossible for any medical man to go and expect to have standardized, modern, American living and competence if he depended on the usual procedure of obtaining his fees. In other words, to consent to go into a remote industrial region and pursue his calling, he must have a guarantee of how many he is going to take care of and for a stipulated sum from each individual, obtained by check-off, he must know his pecuniary rewards to compensate him and his family for the sacrifice he undoubtedly makes in going there. Furthermore, if that remote township becomes a modern town or city with the usual advantages pertaining thereto, then the contract should cease to hold. Some one arises and says, "He helped make it when it was nothing; why should he give it up when it becomes something?" Why should a doctor lie down in Bahia, like Lewis did, of yellow fever to help the world? Why should a man design an instrument and give it to everybody? Why should a research man produce insulin and make it free to you or us?

This is not written to assail contract practice. It is written to try to make a plea for order out of chaos. This Wheeling incident showed that everybody was as unprepared to analyze it as we were unprepared to go into the late war. It may be the right economic move, and when you see how many of the state's leading men are connected with it you begin to believe maybe it is evolutionary. Well, if it is, then the present code of ethics is obsolete; for, clearly, the present code forbids the single usurping of one man's patient by another through any but a volunteer move by that patient of his own free will. Does the wholesale usurpation of patients by way of a big corporation alter, in the slightest way, that command? It certainly does not. It only aggravates it. So, if we are skimming along with an obsolete and outworn code of ethcs in the presence of a new economical order of things, it is high time for us to scrap the old ideals and come out and be honest about it and say, "They simply will not do." This will at least allow a lot of good, capable men who are still holding on to them to have the right to enter into the new industrial and civic requirements; although it would seem tenable to say "fair play" is today just what it always has been.

On every hand you hear that the Ohio County Medical Society will take this matter up in the fall. Let us hope it and every other association and society will go and do likewise, and let it be done without the usual injection of personalities, politics, and incriminations. A system in which it is said twenty-five per cent of the men in a state are involved should give pause to any radical charge on the other side; whereas, a system which runs counter to the old idea of honorable and ethical medicine, even though economically sound (if so it is), should make any contract surgeon, though he be a past president, pause in too hastily flaying a believer in that régime. But if these meetings do nothing more than give each man a chance to say his contract is perfectly sound and above reproach, while that of his competitor is grossly unfair, they will end in ridiculous pandemonium. If they single out some industry like coal and make it the scapegoat, and overlook department stores and telephone companies, as well as railroads, then again they will be futile. If they do nothing but offer resolutions, they will be "sounding brasses and tinkling cymbals." They will be confronted with a big subject of far-reaching import, and one about which warning after warning has been sounded all over the country but to which no one has paid any heed, each society, each organization, each association having that exalted feeling that, in some way, they would muddle through. The Great War, to bring it up again, was nearly lost in an identical manner.

The basis of all contract practice is Big Business. Most of us are believers in Big Business; but that is not to say it should dominate everything. Behind every big contract practice we ever knew of was a big corporation, and that big corporation invariably said, in so many words, "To h—— with medical societies or ethics or any other such nonsense if they interfere with our plans." We never saw a doctor yet who had any other course than to resign if his ideas of conduction, based on the prevailing ethics of his regular brethren, conflicted with those of his corporation. Nor have the annals been crowded with resignations. Therefore, if we have a hypothetical contract city with one hundred thousand people, fifty thousand of whom are workers, thirty thousand their wives and families, not employed. We have twenty thousand people left. Eighty thousand will be under contract spread out over five industries—coal, pottery, cotton, utility, and chemical. There are fifty doctors in the city. Five of the fifty headed the contracts, respectively. They persuaded five each of the others to work under them at a fixed salary. Twenty were let out. The thirty also were free to practice in the city, as were the remaining twenty. This left twenty thousand to

be seen by fifty men. Parts of this twenty—we will say five—had partial contracts with telephone companies and the like. Nurses, hospitals with internes, took a great deal of the load away from the thirty contract men. Free clinics disposed of a big remnant of the twenty thousand, too. Several fraternal orders came in for a part as well. A big chain-store capitalist had provided a "service at cost" to a lot more. A good many were actually healthy. Some went out of the city for treatment. Another contingent went to irregulars and quacks; still more to faith healers. There were ten good, highly trained men who found they could not make a living. If they moved away, identical circumstances would be met elsewhere. What, as time goes on, will the ten men, if they are below forty, going to do for a living?

What kind of a medical society will such a city have? If the local fails, what about the national as time goes on? It is an extreme hypothesis and not likely to happen, but it is worth considering. There are five men under one man in this contract city, and, human nature being what it is, two out of the five are ambitious to be the director and to wait for him to die is often inconvenient, so intrigue develops. Jealousy may actually come to light. Unheard-of envy springs into being. Chaos will come about and differences, yesterday but slight, tomorrow may seem flagrant. Eventually the contingents in the groups of patients that care to assert themselves will do so, and, having a vote, will do away with the whole business and the state will step in and you will have state medicine, which is exactly what the big corporations wanted all the time, because under the old system they paid and under the new scheme not only is all the responsibility taken off their hands but the cost of the proceedings will be shifted to the people. They will pay their part, but if they have a Board of Control like some states have they will find their quota reduced until it is comparatively comfortable.

"Interference by the laity" or, what would be better, a certain small, affluent part of the laity, has become a well-established and gratuitous pursuit. A sample of this sort of writing is to be seen in a half-page article in the New York *Times* of July 7, signed Edwin R. Embree, and the so-called message is headed, "The President of the Julius Rosenwald Fund Sees the Need of Care that is Adequate and Available at a Price that Most People Can Pay."

"Vociferous elements of county medical societies act as though medical service were something which belonged to the doctor. But the physician is only one at interest. The patient is equally concerned and the public at large has an interest in the control of disease and the protection of health. Furthermore, the lay public has furnished the great sums, running to billions of dollars, that have created hospitals and medical schools."

Medical service, bought at a great price, is a salable factor just as much as what Sears, Roebuck and Company have to offer, although we hope it is not traded in a like manner. For Dr. Deaver or Dr. Finney to come out and offer suggestions as to how the mail-order business ought to be run would not be heeded at all; yet some vice-president of a big tea company feels amply qualified to come out and state how one of the most difficult sciences should be administered.

The medical profession is wholly responsible for this state of affairs. Beginning with every small town and running up to the great heads of the profession, it must be confessed doctors come pretty close to being syncophants. All our lives we have heard medical men boasting of their wealthy clientele. We have heard an undoubtedly eminent surgeon, who ought not to be acknowledging any peer in the world, sit up and with a childish glee describe the most simple episode, like eating a luncheon, he has had *the privilege* of enjoying with some thick-headed individual who happened to inherit millions from a hairpin factory or a silk hosiery concern.

In olden days, medical men occupied a dignified position in court circles somewhere near the jester, and while many a jester has ruled an empire as has also the court physician, yet both their heads were liable to kiss the executioner's block on the exhibition of any false move or mistaken effort. It required considerable fawning to keep one's head on one's shoulders. A whole lot of doctors have never gotten over the attitude.

So the penalty of that is, we depend on the rich for a place to work in, and they do not forget to remind us. We should have built the hospitals if it taxed us twenty per cent of our united income, and there is still time to do it yet, but it is fast disappearing. We are servants at the outer gate, and we are often out of a job and then we must play Lazarus and pick up what crumbs we may. The heads of great industrial concerns build our hospitals, hire us out by contract, conduct our research work, control the legislatures which make the medical laws, make our medicines and do about all there is to do, and then we think we are free, untrammeled citizens

pursuing our way as we desire to go. The whole picture is a mirage.

We had great minds in our profession who could have managed all this so that we would have been free and independent today. We had Fords, J. P. Morgans, Sloans, Bakers, Edisons in our ranks, you can be sure, who could have carried us on to where we would have been masters of our own fates. The United States Steel Corporation very properly boasts that it is master of its own course, from mines to finished product; all the way along it decrees what is to be done. No Ford tells it how to do. No mail-order catalogue merchant instructs it how to run its business. But as soon as medical men rise to eminence they are found shoulder-to-shoulder with the men who are now so eagerly defining what our course shall be. We can not feel that any considerable number of medical men of great prominence take much interest in ethics. They are rather bored with them, and if most of them can see their way to greater things vîa the handout of a great foundation or a similar source, they will not hesitate to appear at the head of such an institution, although they know it is against the old ideals. And yet we feel that if these men could have found a way, they would have engineered great projects for the medical profession, operated solely by the medical profession. What were the incentives? None. All our efforts have been at the grindstone of immediate things at our elbow. No planning out for great combines of doctors. No proud structures reared by doctors for doctors. No men like Dr. Eagle, of Martinsburg, with executive judgment, directing extensive hospitals run for the public but solely controlled by groups of doctors.

And so today we have sold our birthright, as did Esau, for a mess of pottage from wealthy, energetic minds in other circles who make automobiles, sell hairpins, distribute oil and mine coal. No wonder they tell us what to do. We never seem to know, ourselves. Our organizations and associations are allowed to do up to a certain point; but if we come to a fight (which we never have, because at heart we are undeniably pacifist) there is compromise or defeat and we fall back on that patient hope of educating the public. The public knows weakness when it sees it.

As none of us believe our particular contract is open to criticism, so many of us will resent the accusation that we are not free to do as we please. Only as to suicide, which the very meanest can try once. Nor will we ever be free until we own and control all hospitals ourselves. It is our work. It is our business. There is no argument. We would not try to dictate what the process of mining coal is to be. If coal mining, incidentally, has to employ us, they should be directed to comply with our methods of work, like they have to comply with the rules of the Interstate Commerce Commission. It is idle to say as the public is the one who gets sick they have an interest in how we shall serve them. They have it in everything else. They have an interest in electric light but they usually pay what the utilities ask and conform to the rules or the light is shut off. The mail-order house does nothing it does not want to do, and merely sells an article in quantities at as close a figure to the regular merchant's price it can get away with and still claim to be underselling. It has ruined many a merchant, and you probably have a couple of good stores in your city which have closed on account of it. Are you better off?

It is all economical, they say. Perhaps it is, but, if it is, almost every one has an uncomfortable feeling that we are paying some kind of a high price for the transition. It seems incredible to a doctor who reflects on the past to conjure up the picture that those brave, painstaking, individualistic men working singly through the last two hundred years, who built up this wonderfully efficient, scientific profession of medicine, are surpassed to any extent by the men of today. The somewhat "snooty" laboratory physician, a mere cog in a big machine, running about with a test-tube and afraid to give an offhand diagnosis on a case of measles, refers somewhat sarcastically (as did our former cabinet member in an unfortunate statement) to the "saddle-bag physician," forgets that he is where he is today through the cumulative efforts of the stronger-minded men of that régime. As we look at them, they did many humorous performances, viewed from what we happen to know today; but not as many wild and useless procedures as we are doing today to have scorned a hundred years hence. What we are doing today has eradicated much, but growing up instead, along with our increased longevity, is an innumerable number of nervous disorders, which scarcely compensate for our economic triumphs.

Therefore, there has grown up in our midst an ever-increasing crowd of men and women who may be said to live up to the old political phrase, "view with alarm." Into this forum come M. Caillaux, brilliant French statesman; Oswald Spengler, German philosopher; T. S. Eliot, modern poet, and Joseph Wood Krutch, able writer, with his essay,

"The Modern Temper," and all assert, in so many words, our civilization is dying. These men proclaim that our blind enthusiasm for economics, standardization, and ever-increasing slavery to machines, certainly do increase our comforts, so that a laborer enjoys more luxuries than a king formerly did; and they do enable us to travel all over the world when we formerly stayed in our corners, with the breadth of knowledge that comes with it, not to speak of countless other experiences never dreamed of before; but at what price comfort? The church is perplexed, as perhaps it should be. The artist is no longer a dreamer of noble things but is a realist and paints apples as they are, not to overlook hideous, misshapen nudes which do exist but are not beautiful. The poet sings of material things since most of the ethereal ones are gone. Family life is going. Love, once somewhat imaginative and often futile, is not taken for granted unless backed by tangibility. Honor is relative, hideous crime on the increase, so that murder, once repugnant, occasions little surprise unless we happen to know the victim. Courtesy, at times spoken of, but replaced, either on road or in household, by something called "seeing things as they are." Now comes a man, Stuart Chase, with a new and widely read book, which every doctor should read, on "The American Peril" and which is called "Men and Machines" (Macmillan Company, $2.50). Mr. Chase, although a bit uncertain here and there, believes that machines can enslave us if we let them, but power never. Comforting it is to read the article of William A. White, M.D., former president of the American Psychiatric Association, who feels that through it all we are steadily going upward despite the standardization. Spengler says the history of the world shows each nation or civilization has its infancy, its childhood, its youth, adult life, and then old age and decay. He avers our adoption of the machine and economics is our beginning period of decay. Our altogether untutored opinion would be that one guess is as good as another.

All the same, as we see the oath of Hippocrates attacked as obsolete, as we see our ethics shattered as untenable in an economic age; as we adopt so many practices that group us together and have a tendency to minimize the breadth of activity of a single brain, not stopping to consider where it is going to stop; as we see other outside agencies taking hold of the control of our profession, we must, whether we will or not, pick out what is reasonable and progressive and have the courage to reject, at whatever cost, what we believe to be destructive, even if it requires a complete rehabilitation.

The parting of the way is here. The time for easy-going acceptance is past.

We can go on and never lift a hand. Things may work out for the best, quietly and peaceably. They never have. Ultimately, even though there may be a period of defeat before us, this thing is certain: Medical men will ultimately rule the world. They alone have the human insight. The day will come when medical men will entirely dominate the destinies of their profession. They may almost cease to exist, first. In 1940 there is going to be a shortage.

Children's Diseases

Before reaching adult ages, 90 per cent of persons in the United States have measles, from 75 to 80 per cent whooping cough, from 70 to 75 per cent mumps, and from 50 to 60 per cent chickenpox, the United States Public Health Service estimates on the basis of a survey of the age incidence of communicable diseases in children.

In a statement made public July 12, based on the survey, the service said that the estimates have been made from data accumulated from a number of sources. The maximum incidence of these primarily diseases of children, said the statement, varies from about three years to eight years. The full text of the statement follows:

Data from a number of sources on the percentage of children of specific ages who gave a history of a past attack of certain of the common communicable diseases of children were combined by investigators of the Public Health Service, to secure an average percentage who have been attacked. The diseases included were measles, whooping cough, mumps, chickenpox, scarlet fever, and diphtheria. Although there is considerable variation in the age incidence of these diseases in different localities, the data at hand did not seem sufficiently accurate to make it worth while to study anything but the average for all communities combined.

In data of this kind there are fairly large errors, not only those due to sampling but errors of observation such as those due to forgotten attacks, which would presumably become increasingly important as age increases. Nevertheless, it appears that the data are a fairly accurate and complete record of the proportion of the population that is attacked by these diseases. The data considered in this study are chiefly

from urban communities of moderate size, but they include some distinctly rural areas.

By the time adult ages have been reached nearly 90 per cent of persons have been attacked by measles, from 75 to 80 per cent by whooping cough, from 70 to 75 per cent by mumps, from 50 to 60 per cent by chickenpox, and from 10 to 15 per cent by scarlet fever. From 10 to 15 per cent have suffered clinical attacks of diphtheria, but as many as 60 per cent give a negative Schick reaction, indicating an immunity to diphtheria.

From these percentages who have been attacked, which may be considered as representing an accumulation of cases in a hypothetical population observed from birth to adult ages, may be secured an approximation of the incidence of these diseases at specific ages. The maximum incidence varies from about three years for diphtheria to about eight years for mumps. After the maximum is reached, the rates in every case decline rapidly as age increases.

From the same data it was possible to secure an approximation of the incidence of these diseases among children of specific ages who have not previously suffered a recognized and remembered attack and, therefore, in the absence of immunity from some other source, may be considered relatively susceptible. The maximum incidence of measles, whooping cough, chickenpox, and scarlet fever among children who have not previously been attacked and the maximum incidence of diphtheria among children of a positive Schick test occurs at about 6 years of age. It appears that, on the average, children who have not suffered attacks of these diseases prior to school entrance are more likely to be attacked during their first school year than at any other time.

After the maximum, the incidence rates among children who have not previously been attacked decline considerably as age increases, although the relative decline is not as rapid as in the instance of the rate among all children. Apparently this decline could be due either to the development of immunity or to a change in contact, or both.

Some children counted as relatively susceptible because they report no prior attack may be immune to these diseases: (*a*) It may be that some children develop a specific immunity without having an attack of the disease, as in the case of Schick-negative children who have not suffered an attack of diphtheria; (*b*) as age increases, children may develop a more or less general immunity to infections of this type, which partially protects them from attack; (*c*) immunity may have been acquired by mild unrecognized or forgotten attacks; (*d*) some children may have from birth a natural immunity to some of these diseases.

The frequency and intimacy of contact with cases of these diseases may decrease to some extent as age increases.

Death rates were computed for children of specific ages in the registration area of the United States for the period of 1917–1923. With the exception of diphtheria, the maximum death rate in every instance comes at an earlier age than the maximum case rate.

By relating the death rates and the case rates, an approximation of the case fatality of these diseases is secured. In every instance the maximum fatality occurs under one year of age. The fatality of measles, whooping cough, and mumps declines to an almost negligible percentage by five years of age, but the decline for scarlet fever and particularly diphtheria is by no means as great as in the case of the other three diseases.

Medical Center in Richmond

Announcement has been made of plans for the development of the medical center in Richmond at the Medical College of Virginia by Dr. W. T. Sanger, president of the institution. The work will likely cover a number of years.

The first unit of the new center, a building for the college school of nursing costing approximately $300,000 for construction, equipment, and site, has been completed. The other units will go up as fast as funds, which are being sought in different directions, are available. Most of the ground to be used has already been acquired.

The buildings projected are as follows:

A library to be constructed in association with the library of the Richmond Academy of Medicine; cost approximately $125,000.

A teaching unit to house the outpatient department and laboratories for the teaching of chemistry, bacteriology, and pathology; cost approximately $750,000.

A nurses' dormitory for the St. Philip Hospital school of nursing, an institution maintained by the college for negro girls; cost about $150,000.

A building for clinical dentistry; cost approximately $400,000.

A general hospital for white patients, to be built in association with the outpatient department and teaching laboratories; cost $1,000,000 or more.

A gymnasium, auditorium, and recreational center; cost undetermined.

When this plan is carried through it is hoped to provide dormitories for students in the schools of medicine, dentistry, and pharmacy.

The Hookworm's Aid to Progress

The idea of county or local health organizations with full-time staffs was a natural outgrowth of the work of the original Rockefeller Sanitary Commission, which assisted states of the southern United States in the control and prevention of hookworm disease. This disease has been described as "probably the most prevalent of all man's ills; certainly the most common of all human parasitic infections." Tropical and semi-tropical regions furnish the conditions of warmth and moisture under which, in all but a few kinds of soil, the small hookworm larvæ, hatched from eggs, flourish. These larvæ make their way through the bare feet of their human host into the intestinal tract, where they remain as parasites, robbing their victim of blood.

The fact that people can be quickly freed from this infestation and protected by proper sanitation from a recurrence of the disease makes the malady extremely useful in showing rural communities what public health means. Hookworm disease has been called "the advance agent of public health organization," because it has prepared the way for more general and inclusive programs. Thus, several years ago, the Rockefeller Foundation ceased to give aid to anti-hookworm campaigns in the United States, but concentrated its efforts upon expanding hookworm units into county health organizations.

In certain other countries aid is still being given to anti-hookworm campaigns, both for the sake of the victims and as a means of promoting the idea of more inclusive health activities. During 1928 assistance either through grants of money or through expert advice was given in Mexico, Central America, Jamaica, Porto Rico, Colombia, Paraguay, Venezuela, Spain, Ceylon, India, the Netherlands, East Indies, Siam, the Straits Settlements, and in the South Pacific Islands. Hookworm studies were continued at the Johns Hopkins University, at Vanderbilt University, and at a special research laboratory in Alabama.

New Vitamin Source

The avocado, or alligator pear, has been so recently introduced into the United States that its qualities are not widely known. Lulu G. Graves, a well-known dietitian, gives some interesting information about this new fruit in *Hygeia* for July.

Experimental investigation at the University of Southern California has shown that avocado pears have a high content of vitamins A and B, and work is now in progress to determine the presence of other vitamins, C, D, and E. It is also higher than other fruits in protein content, in calorific value, and in minerals.

Miss Graves describes numerous uses for the avocado in the diet. Because of its high vitamin and oil content, and its low carbohydrate content, it is of value in diabetic diets as well as in tuberculosis and other diseases of malnutrition.

The avocado enthusiast eats it plain with salt or a dash of lemon juice or French dressing. It may be combined in salads, in desserts, or served as sandwich fillings. Miss Graves recommends a combination of cucumbers, tomatoes, and avocados. Another suggestion is to combine the unusual fruit with grapefruit, pineapple or oranges in a salad. A sandwich filling is made by adding shredded ripe olives and minced cucumber pickles with mayonnaise to mashed avocado. This is especially good on whole-wheat bread.

Avocados vary considerably in size, shape, and color. A pound is about the average weight and it is usually pear-shaped. The color may be yellowish green or may be any shade between it and a purple that is almost black.

To select a good avocado, practically the only test is to pick up one and press it; if it gives between the fingers it is likely to be ripe, for the flesh in the ripe fruit is of a buttery consistency. Be gentle with the pressing, however, Miss Graves warns, for the avocado is easily spoiled by bruising.

The General Practitioner

M. L. Harris, Chicago (*Journal A. M. A.*, Dec. 1, 1928), traces the decline of the family physician and attributes the cases to various factors. The health examination of school children weaned many mothers away from the family physician. Health officers and boards of health, overstepping their legitimate field of operations, began to treat certain individuals and to furnish advice, and in some instances, remedies, free to those whose economic status did not entitle them to free treatment. This again took a certain number of people away from their family physicians. Following this came the infant welfare society. This act was abused by many well-to-do mothers who imposed on the generosity

of the medical profession, which was giving its service ostensibly to the poor; this also estranged them from their family physicians. A few years ago, workmen's compensation acts were passed by the legislatures of the various states. These laws again took a great deal of work away from the family physician. These workmen's compensation acts brought into being a number of insurance companies organized for the purpose of insuring the industries against loss by reason of injuries to the employees. Many of these insurance companies, in order to save money, employed young physicians with little experience in handling industrial injuries to look after their cases, often paying them a small and inadequate compensation, the companies seemingly not realizing that the most expensive service they can have is cheap surgery, on account of the frequent bad results which many of the injured suffer from incompetent treatment. These injured employees are deprived of the privilege of having their family physician on the case, should they so desire, except at their own expense, owing to the rule of doubtful legality promulgated by the insurance company that they must have the physician designated by it. A few years ago, some of the life insurance companies began urging their policyholders to have a periodic health examination with the idea that it would increase their longevity. Soon after this, commercial institutions organized for profit appeared on the scene for making these periodic examinations. As a result of their altruistic sophistry, many misguided physicians throughout the country were induced to lend their services for the purpose of making these examinations. In this instance, the physician has been induced to sell his brains and skill to a jobber for $5, who immediately resells it to the consumer for $25. This is merely another way in which the confidence of the people in the family physician is undermined. If there is any one who should make these examinations, it is certainly the family physician who is thoroughly acquainted with the patient and his environment. These are things that have had their origin with the people and have had a tendency to wean them away from the family physician. However, it may be said that some of them at least have been encouraged by the profession. There is an overproduction of specialists. Medical students today seem to be imbued with the idea that the science of medicine is so extensive that no person can hope to compass the whole subject, and therefore each one should try to limit himself to some particular branch. This idea has been instilled into the minds of the students by the present method of teaching in our medical schools. As a result of this teaching, the student becomes convinced early in his college career that, since it is not possible for him to become proficient in the entire subject of medicine, he must be a specialist in some branch long before he has completed his fundamental medical education. The custom that prevails in most medical schools, of permitting students to take so many hours of elective studies, Harries believes is bad, as it stimulates the desire to specialize. Again, too much time is spent in the various laboratories and in experimental work, until the student is led to think that disease is to be located in a test-tube instead of in a living human being. It is a mistake to permit students to spend too much time in original experimental or research work. Many communities are sadly lacking in good general practitioners; the number of specialists in some of them is as high as 30 per cent of the total and many of the remainder would like to devote themselves to a specialty if their practice would permit it. This is perhaps largely the fault of the people, who seem to be obsessed with the idea that there must be a specialist for every human ill. As a result, specialists began to multiply in order to satisfy this popular craze. What the people need more than anything else are more general practitioners, men with a thorough knowledge of general medicine, men who may become intimately acquainted with the lives and habits of their patients and who may be able to care for the great majority of their ailments, since it is only a minority of these that require the attention of a specialist. The medical profession has come in for many opprobrious remarks on account of the charges made for services. That some of the charges may have been exorbitant there can be no question, but that such has been the rule must be denied. Nor is the profession entirely to blame if the fees have been raised in certain cases. The people have gotten away, as has been shown, from the custom of consulting their family physician in ordinary illnesses. They seem to have developed the idea that there must be a specialist for every ill, and that they must have as many physicians or specialists as they may imagine that they have diseases. Of course, the people expect to pay the specialist more, and if he doesn't charge more it is thought that he can not be much of a specialist and they are dissatisfied. Here is a sort of vicious circle: the people look for specialization; the medical schools turn out more specialists; specialists, being poorly versed in general

medical knowledge, become narrow-minded and see nothing but their particular subject in the patient, overlooking the fact that a human being is not simply a group of disconnected functions but a harmonious combination of many interrelated functions. Physicians work more hours in the twenty-four than any other class, yet they are constantly being called on to give more of their time to altruistic work. Any physician, to keep abreast of the progress that is being made, must be an eternal student. No eight-hour work days are his; the candle frequently burns at both ends. To be a good practitioner takes not only most of the physician's time but also much of his money, since new books, periodicals, paraphernalia, and time spent visiting institutions of learning in order to improve one's knowledge are expensive. People should not expect to obtain good things for nothing. It is frequently said that rural districts in many instances are without good physicians and often without any at all, and this by some is attributed to the scarcity of medical practitioners. This, however, is not true, since there are plenty of physicians in the country. The reason rural districts are often without good medical service is that the community will not make it an object for a physician to locate and remain there. The rural district may have any kind of a physician it wants, a good one or a poor one, according to what it is willing to pay for. How are we to regain the complete confidence of the people, which now seems to be on the wane? How are we to counteract the pernicious influence of the hundreds of lay organizations created for the purpose of bringing to the great masses the kind of medical services that they are in need of and at a cost within their means? Harris believes that this can be done only by an organization for the business of distributing a high class of medical care to all who are in need of it. Every county society should organize as a business institution with headquarters properly equipped for handling all kinds of ambulatory cases. This should be a community medical center and provision should be made also for the care of all those who need hospitalization or bed treatment. The service should be arranged for by the institution itself, each physician contributing a certain amount of his time and skill to the work. It is to be understood that this is not to be a charitable institution where service may be had free. Public charges should be paid for at reasonable rates by the county. Services to all others should be paid for at rates within their means as determined by their economic status. Those who are able to pay the regular rates of physicians should have their own, as at present. Such an institution should not only be self-sustaining but should be able to pay reasonable compensation to the physicians who are doing the work. Such an institution should be of great advantage, financially and otherwise, to the profession. It should keep the control of the care of the sick within the confines of the profession and not allow it to drift into the hands of foundations and lay organizations.

Food Allergy in Infants

The intolerance of certain kinds of food, especially by infants, is an interesting and important subject. It is well known that a child may be hypersensitive to an ordinary food and react with marked symptoms to its use.

Bret Ratner, M.D. (*American Medicine*, Nov., 1928), discusses sensitization or anaphylaxis relative to infant feeding, bringing out many points as to why a child is allergic and why it is necessary to adjust a feeding formula to the individual case. A number of cases of particular interest, as to hypersensitiveness regarding certain food elements, are described in detail. It is pointed out that such sensitization upon the part of the infant may be due to the mother's abnormal desire for an indulgence in certain kinds of food during pregnancy. The study of food allergy in infants must be carefully made in order that the adult may not be a victim of unusual hypersensitiveness to certain foods, and consequently react to many physical as well as moral undesirable symptoms.

Dana Award Made

In recognition of "the most outstanding achievement in the prevention of blindness and the conservation of vision," Dr. Ernest Fuchs, of Vienna, Austria, will be awarded the Leslie Dana gold medal for 1929, it was announced on July 29 by Lewis H. Carris, managing director of the National Society for the Prevention of Blindness. The presentation will be made at the International Ophthalmological Congress in Amsterdam, Holland, September 10, by Dr. William H. Luedde, of St. Louis, director of the Prevention of Blindness Department of the Missouri Association for the Blind, through which the medal is offered annually by Mr. Leslie Dana, also of St. Louis.

"In selecting Dr. Fuchs, there was a departure for the first time from the usual custom of considering only Americans for this honor," said Mr. Carris. "Dr. Fuchs charted the way for all pre-

vention of blindness work accomplished throughout the world in the last 45 years; he did this when he won the prize at the Fifth International Congress for Hygiene at The Hague in 1884 with his essay on 'The Causes and Prevention of Blindness.' Dr. Fuchs was a professor of ophthalmology in the University of Liege at that time; he has been distinguished in his profession for more than half a century."

The reëlection of William Fellowes Morgan, of New York City, as president of the National Society for the Prevention of Blindness, was also announced by Mr. Carris. Others officers who were reëlected by the executive committee to serve until July, 1930, are: Dr. Park Lewis, of Buffalo, N. Y., first vice-president; Russell Tyson, of Chicago, second vice-president, and George Blagden, of New York City, treasurer.

Veterans' Bureau

The United States Civil Service Commission announces the following open competitive examinations: Physician, $3,800 a year, and associate physician, $3,200 a year. Applications for the above-named positions must be on file with the Civil Service Commission at Washington, D. C., not later than December 30.

The examinations are to fill vacancies in hospitals of the Veterans' Bureau for duty throughout the United States. The entrance salaries are as indicated above. Higher-salaried positions are filled through promotion. Competitors will not be required to report for examination, but will be rated on their education, training, and experience.

On account of the needs of the service, papers will be rated as received and certification made as the needs of the service require. Full information may be obtained from the United States Civil Service Commission, Washington, D. C., or from the secretary of the United States Civil Service Board of Examiners at the post office or customhouse in any city.

Toxicologists Wanted

The United States Civil Service Commission announces the following open competitive examinations: Senior toxicologist, $4,600 to $5,200 a year; toxicologist, $3,800 to $4,400 a year; associate toxicologist, $3,200 to $3,700 a year, and assistant toxicologist, $2,600 to $3,100 a year. Applications for the above-named positions must be on file with the Civil Service Commission at Washington, D. C., not later than August 28.

The examinations are to fill vacancies occurring in the bureau of chemistry and soils, Department of Agriculture, and bureau of mines, Department of Commerce, for duty in Washington, D. C., or in the field; in the chemical warfare service, War Department, for duty at Edgewood Arsenal, Md.; and vacancies occurring in positions requiring similar qualifications. At present there is a vacancy in the position of toxicologist in the bureau of chemistry and soils, Department of Agriculture, with headquarters in Washington, D. C., the duties of which require experience in organic and inorganic insecticides.

The salaries of these positions are as specified above. For appointment in Washington, D. C., the entrance salary will be at the minimum rate of the salary range; appointment to the field service may be at any rate within the salary range, varying with the conditions obtaining at the headquarters where the vacancy exists. Higher-salaried positions are filled through promotion.

The duties are conducting or assisting in conducting experimental investigative or research work on the physiological action of toxic compounds. Competitors will not be required to report for examination, but will be rated on their education, training, experience, and on a thesis or publications, to be filed by the applicant. Full information may be obtained from the United States Civil Service Commission, Washington, D. C., or from the secretary of the United States Civil Service Board of Examiners at the post office or customhouse in any city.

Crippled Children Fund

Disbursement of the forty-thousand-dollar appropriation by the last West Virginia legislature for the care and treatment of crippled children in the state will begin in the near future. A meeting of the crippled children's council was held in Charleston on July 23, officers were elected, and plans for utilizing the fund in the most effective manner were outlined and adopted.

It was very gratifying that the crippled children's council turned to the West Virginia State Medical Association for advice and guidance in formulating plans for operation. Dr. Harry M. Hall, of Wheeling, president; Dr. Walter E. Vest, of Huntington, president-elect, and Dr. R. H. Dunn, of South Charleston, council chairman of the West Virginia State Medical Association, were present at the July

23 meeting at the invitation of the crippled children's council.

Dr. Hall, Dr. Vest, and Dr. Dunn spoke briefly upon crippled children's work and explained how they thought the fund could be best utilized. They were questioned at considerable length by the members of the crippled children's council concerning the attitude of the medical profession in West Virginia toward the appropriation. The council accepted without reservation practically all of the suggestions made by the Association representatives, and promised the utmost coöperation in disbursing the fund.

It is the plan of the crippled children's council to establish a number of "treatment centers" throughout the state, with a trained and experienced orthopedic surgeon in charge of each center. The council plans to utilize all of the resources of the medical profession within the state, from the general practitioner to the highly trained specialist. It is also the plan of the council, in rehabilitating crippled children, not only to correct the existing deformities but also to give whatever additional treatment that might be necessary to make a robust and healthy child out of each patient.

Dr. Hall was heartily backed up by Dr. Vest and Dr. Dunn when he insisted that the crippled children's work be carried out on the highest possible plane and that the work be distributed throughout the state, instead of concentrating the work at one central location. Dr. Hall also pointed out the prime importance of following up all cases after they were discharged from hospital treatment.

The State Library

On January 15, 1929, less than seven months ago, the offices of the West Virginia State Medical Association were moved from the two small rooms in the Professional building at Charleston to three large rooms in the public library building. The largest of these three rooms was at that time equipped to house a small medical library, which the association hoped to build up in the future years. At that time the association had about twenty-five or thirty medical books on hand and, in addition, received approximately twenty-five of the state and national medical journals published in this country.

On July 23 an inventory of the medical library was taken and it was found that the association now has over four hundred volumes in the library shelves. In addition, the library is now receiving about thirty-five of the national and state medical journals, which are available at all times. The cumulative medical index put out by the American Medical Association is also a part of the library equipment as an aid in looking up subjects or authors in the various journals.

To date no money has been spent on the medical library for any purpose. All of the medical publications that are received come through a courtesy exchange with the WEST VIRGINIA MEDICAL JOURNAL. A number of the medical books have been received direct from the publishers for review purposes. The remainder have been given to the library by members of the association.

If the state medical library continues to grow during the next few years as it has in the past seven months, there is every indication that it will become a valuable accessory to the association work.

Attack on Dr. Thayer

Dr. Clarence True Wilson, reformer, recently attacked Dr. William S. Thayer, president of the American Medical Association, and in an outburst of wrath branded Dr. Thayer as "unpatriotic." Fearing that this statement might be accepted at face value, the Charleston *Gazette* has rallied to the defense of Dr. Thayer with a list of his past services to his country. Commenting upon the attack by Dr. Wilson, the *Gazette* states:

"Here is the man called unpatriotic by Dr. Wilson:

"Born in Massachusetts in 1864.

"Graduated from Harvard College.

"Graduated from Harvard Medical School.

"Is a professor emeritus of medicine at Johns Hopkins University.

"During the World War, served as major and deputy commissioner of the American Red Cross mission to Russia.

"Later was chief consultant, with rank of brigadier general, to the American Expeditionary Forces in France.

"Is now a brigadier general in the Reserve Corps.

"Holds the Distinguished Service medal of the United States government.

"Has a world-wide reputation and is easily among the leading men of medicine in this country."

Infant Mortality Figures

The Department of Commerce announces that for the birth-registration area, exclusive of Massachusetts and Utah, the birth rate for 1928 was 19.7 as compared with 20.7 for 1927. In 33 of the 38 states for which figures for the two years are given, the birth rates were lower in 1928 as compared with

1927. The highest birth rate in 1928 (27.5 per 1,000 population) is shown for North Carolina, and the lowest (14.4) is for Washington.

The same states shown in the birth area have for 1928 a death rate of 12.3 as compared with 11.4 for 1927, and increases were reported in 36 of the 38 states. The highest 1928 death rate (14.5 each per 1,000 population) is shown for California and Mississippi, and the lowest rate (7.4) is for Idaho.

The infant mortality rate for 1928 represents an increase as compared with 1927, the rates being 68.0 for 1928 and 64.6 for 1927. The highest infant mortality rate (142.2) is for Arizona and the lowest (46.9) for Oregon.

Infant mortality rates are shown for both years for 54 cities of 100,000 population or more in 1920. For 39 of these cities the 1928 infant mortality rates were higher than those of the previous year, the highest 1928 rate (99.3) being for Nashville, Tenn., and the lowest (42.7) for Seattle, Wash.

The births and the death rate under one year are given below for seven cities in West Virginia:

	Births		Deaths	
	1928	1927	1928	1927
Bluefield	462	503	35	43
Clarksburg	659	715	47	47
Fairmont	521	516	45	53
Martinsburg	340	366	38	37
Morgantown	393	441	25	33
Moundsville	339	336	16	27
Parkersburg	497	680	39	46

Private Practice Must Prevail

Many of our best educated and most thoughtful doctors, seeing the many imperfections in our present system of seeing after the health needs of the people, are inclined to roll an inquiring eye toward state medicine—in the sense of the state providing medical care through taxation after the fashion that provision is now made for education.

In the event of so entirely unanticipated a condition as would result from a falling off of, say, 25 per cent, from our present degree of satisfactoriness to our patients, we would admit of the bare possibility of a trial of state medicine; but we would wager our all on its breakdown within the year. The reason: Man will choose his doctor, and when he can not do so conditions promptly become more unsatisfactory for all parties concerned.

The relation of pupil to teacher is nothing like so intimate and personal as that of patient to doctor.

The pupil is under the teacher a few hours in the day, five days in the week, for seven to nine months in the year (much time out for holidays), for from 8 to 12 years. The patient is under his doctor 24 hours out of each day from nine months prior to his birth to the drawing of his last breath.

Moreover, hard fact though it be, we are *most* requiring in making personal selection of those who are to see after "those we love best, our noble selves."

Then, man wants his doctor when he wants him —night or day, meal-time or fast-time, Sunday or Monday—and as frequently as his discomfort, his fear, his humor, his caprice, or even his malice prompts him to apply for attention. In private practice doctors regulate this fairly satisfactorily by charging according to amount of attention paid the patient and of inconvenience caused the doctor; and always recourse can be had by either to giving the other up. Picture conditions after a few months of state medicine: every doctor (or practically every doctor) appointed by political methods, on salary from the state, and fearful of having complaint made to the authorities because he can not respond immediately and simultaneously to two calls coming in, one at three and the other at three-three A.M., each caller announcing angrily and loudly that he pays taxes and he'll have attention or know why.

In one of our departments, in this issue, Dr. F. R. Taylor points out some grave defects in our present system of caring for the sick, and makes some suggestions as to means of remedying. With much of what he recommends we are in complete and enthusiastic accord; but our conviction is firm that anything gained by the weakening of the individualistic practice of medicine will be bought at too great a cost.

Heresy has no terrors for us; we are constrained by considerations of workability.

When human hearts and human minds have come to be of the quality which would make state medicine endurable for the house-to-house doctor, ownership in common will be working perfectly, and few will be the diseases to slay or other ills to vex.—*Southern Medicine and Surgery.*

The Office of Medical Examiner

The colonization of this country by a population predominatingly British in origin led to the adoption by the original colonies of the English office of rural county coroner.[1] As population spread westward, this office was made part of the governmental system of those newer states which later became part of the union. In none of the states has the office undergone statutory revision that would better fit it to perform the important duties at present de-

manded of it. Most valid among the criticisms which have been made against the office of coroner is the fact that it demands of an individual of whom no especial professional qualifications are asked the performance of legal and medical duties which require great technical knowledge. The medical duties in particular have become increasingly important and difficult as the work of the office has increased through concentration of population.

That the office of coroner is not the only agency through which the problems constantly undertaken by it can be solved is well enough known to the student of forensic medicine. Repeated investigations have been unanimous in decreeing that it is the least efficient of all possible methods for performing the functions usually demanded of it and that it should be abolished and should be replaced by some more efficient agency. Successful attempts in this direction have been made in a few localities, but their number is surprisingly few in view of the success they have had. It is perhaps more than a mere coincidence that the first state to take a forward step in solving the problems presented by the office of coroner should have been the second oldest of the original thirteen colonies and the commonwealth which has in its historical background Faneuil Hall, the Boston Tea Party, and Bunker Hill. In 1877, Massachusetts, instead of attempting to improve the office of coroner by amending or modifying legislation, an admittedly hopeless task, abolished the office entirely. The legal duties of the office were transferred to already existing and adequately functioning judicial and prosecuting agencies, and the medical duties were vested in a new office, that of medical examiner, the original enactment requiring of the medical examiners that they be "able and discreet men, learned in the science of medicine." The fundamental improvement brought about by this law was that it placed the highly technical medical duties of the former coroner's office in the hands of medical examiners, of whom a higher degree of scientific knowledge, interest and efficiency might be asked and expected than of the usual type of coroner. Other decided improvements of the Massachusetts medical examiner system, as compared with the coroner system prevailing in most other states, are that the medical examiners are appointive rather than elective officials, and that the term of office is seven years instead of the usual two- or four-year term of coroner. In the light of present-day conditions, the Massachusetts law, as passed and as it stands today, is not perfect. It requires that there be two medical examiners, maintaining independent offices, in the county of Suffolk, in which Boston is situated, and as many in each of the other counties as the county board of commissioners may determine. The two Suffolk county examiners are on a salary basis; the rest, of whom there are seventy-two, are on a fee basis. Merging of the two Suffolk county offices into one with a chief medical officer, and consolidation of the seventy-two outlying medical examiner districts into a much smaller number, each in charge of a salaried medical examiner, would make for greater efficiency.

The next most important adoption of the medical examiner system was by the city of Greater New York in 1915. Previous to that time the county coroners of the various political units which were combined into the greater city acted independently. The incompetency, inefficiency and worse of these coroners was scathingly denounced by the commissioner of accounts in a report,[2] issued earlier in 1915, which was an important factor in the replacement of the coroner system by the medical examiner system. The New York law is an improvement over that of Massachusetts. A single office of chief medical examiner performs, efficiently and thoroughly, the important medico-legal duties of a jurisdiction which has an area of 316 square miles and a population of more than six million people. It not only does those things customarily required of the office of coroner, but furnishes, in addition, important data relating to vital statistics and scientific medico-legal information which no political office of coroner could hope to give. The office is under civil service, the tenure being indefinite, and removal being possible only by the municipal civil service commission after trial on charges filed by the mayor. Of the office of medical examiner of New York City, the report[3] on "The Coroner and the Medical Examiner," made by the National Research Council in 1928, says: "In the character and volume of the work done, in the working facilities and budget allowed it, in its functioning in the investigation of crime, in its cooperative relation to other agencies, in the service which it gives to the public, and in its freedom from political interference, the office of medical examiner of New York City is the most outstanding agency devoted to forensic medicine in the United States." Of great importance is the fact that the office does a much larger volume of work much more efficiently than in the days of the coroner system, at a smaller cost than did the office of coroner which it superseded.

The most recent adoption of the medical examiner system, by New Jersey[4] in 1927, is of interest because the application of the system differs somewhat from that of Massachusetts and New York City. In Massachusetts, the medical examiner system was made mandatory throughout the state. In New York it was made obligatory for the most populous urban community in the country. In New Jersey, the adoption of the system was made optional with the two counties of the first class and was precluded from the less densely populated counties. Why such a distinction was made between the more populous and the more rural counties is difficult to understand, unless perhaps it was felt that in the latter the medical examiner system does not function so well as in centers with a heavy urban population. This is true in Massachusetts and will probably be true elsewhere if county lines are to be made the basis of medical examiner districts. The rural county should not be the unit of the medical examiner system, if the laws of the state will permit the consolidation of two or more counties into medical examiner districts; such an obliteration of county lines is possible in some states in the establishment and maintenance of sanatoriums for tuberculosis. With modern roads and automobile transportation, much larger areas can be more quickly covered by a single medical examiner than was the case when Massachusetts adopted its statewide medical examiner system.

That the office of coroner is an inefficient and inadequate agency of criminal justice has been asserted by every organization that has made impartial investigation of the situation. That the office of medical examiner is a vastly better agency, as that office functions in Suffolk county, Massachusetts, in New York City, and in Sussex county, New Jersey, must likewise become apparent to every one who gives serious thought to the matter. The demands of criminal justice and the advancement of forensic medicine require the replacement of the medieval office of coroner by the more modern office of medical examiner in populous urban centers and some adaptation of the medical examiner system that will make it equally applicable to rural communities.

REFERENCES

1. The Office of Coroner, editorial, *J. A. M. A.*, 92:2024, June 15, 1929.

2. Wallstein, L. M.: Report on Special Examination of the Accounts and Methods of the Office of Coroner in the City of New York, New York, 1915.

3. Schultz, O. T., and Morgan, E. M.: The Coroner and the Medical Examiner. Bull. 64, National Research Council, Washington, D. C., 1928.

4. An Act Concerning Chief Medical Examiners, Coroners and Morgue-Keepers in Counties of the First Class in the State. Official Copy Reprint, Assembly 233, State of New Jersey, February 7, 1927.

—*Journal A. M. A.*, July 20, 1929.

Malaria Control

By DR. A. M. STIMSON
Assistant Surgeon General, Public Health Service

Malaria studies of the Public Health Service have been in progress for a number of years, and many problems have been definitely solved. For example, the problem of the malarious town or city. Methods for malaria control well within the means of such localities have been worked out, and, where they have been faithfully employed, malaria has been reduced to a negligible quantity.

The more difficult problem is in process of solution, namely, that of rural malaria, where the population is scanty and none too wealthy and the breeding areas of malaria-carrying mosquitoes are very extensive. During the present season an intensive country-wide effort is being made to control this disease at reasonable cost and by methods which have been either originated by or tested out by the Public Health Service.

In this study one finds investigators plodding around through swamps in hip boots, poling boats through weed-grown pools, chugging over the surfaces of ponds with an outboard motor, or actually flying over large acreages of mosquito-breeding territory and distributing dust clouds from an airplane which will settle on the ground or water and kill the mosquito wigglers.

Also, one finds the investigators taking blood smears in schools and elsewhere and examining them in little temporary laboratories to find out how much malaria there is in the area under study.

Similar to the malaria studies in some respects have been the studies of salt-marsh mosquitoes recently ended by reason of the termination of the special appropriation made for the purpose. These included the vast coastal area in the South Atlantic and Gulf states.

It is hoped that the publication of a report on these studies will be of great value in controlling mosquito breeding in these areas and give a permanent boost to the residential, commercial, and recreational development of many a hitherto almost uninhabitable area.

Particularly interesting have been the field investigations of the Public Health Service regarding the sanitary aspects of milk supplies. In Europe the United States enjoys the reputation of having especially good milk supplies.

It is true that at their best American supplies are unsurpassed. It is, unfortunately, also true that in a great many cities in the United States an inferior milk supply is being sold at the present time, and the menace involved in this situation is well illustrated by an outbreak last year in a community of only some 4,000 people where 600 became suddenly and seriously ill and nearly 50 died.

Incidental to its studies, the Public Health Service has developed a milk ordinance which has been adopted by some 280 cities distributed throughout 20 states. The results secured by the ordinance where it has been effectively administered have been most gratifying, inasmuch as, together with significant advantage to the dairy industry, a very marked raising of the level of the sanitary quality of milk has been achieved.

An associated study has consisted of the examination of a large number of models of pasteurizing machinery. During the progress of the study great improvements have been made and it is believed that the time is at hand when, so far as equipment is concerned, pasteurization will closely approach the 100 per cent effective process.

It is impossible to describe the manifold activities of the field investigation work engaged in by the Public Health Service in an article of this length. In passing, we might refer briefly to studies of goiter which have mapped out the prevalence of that disease, developed uniform methods for studying it, and assembled existing knowledge concerning methods of prevention.

We might refer to studies of influenza, which have assembled a great body of information concerning the natural history of this disease; of leprosy, which are apparently presenting a far more hopeful outlook on this condition; of drug addiction, which have gone far to allay the hysterical agitation concerning this menace.

We might refer also to the studies of cancer, which, while not as yet affording any hope of a radical solution of the problem, are gradually bringing together facts which are bound to prove a useful contribution to the studies of this disease.—*United States Daily*.

James R. Kelly, Quack

James R. Kelly, of Denver, Colorado, has been operating some mail-order quackery under such imposing trade names as "Great Western Drug Company," "Western Drug Company," and "W. D. Company." His business has been that of selling an alleged cure for sexual mpotence and another alleged cure for "rheumatism." He started the business about December, 1926, and his advertising literature was prepared by the Hower Advertising Agency of Denver, which was willing to share in the profits of the fraud, and placed the advertising in a number of papers and periodicals. Kelly's nostrum for sexual impotence was known as "Hercules Tablets," with a side-line, "New Vim (Hi-Pep) Gland Capsules." The Hercules Tablets were found to contain iron carbonate, calcium carbonate, dandelion and strychnine, while the "New Vim (Hi-Pep) Gland Capsules" were found to contain a mixture of gland substances with considerable thyroid. The rheumatism nostrum, "Golden West Rheumatic Treatment," consisted of capsules composed, for all practical purposes, of 5 grains of aspirin, with minute amounts of other drugs; the tablets were purgative, containing, among other things, croton oil and jalap. Kelly's nostrums were prepared by the Cole Chemical Company of St. Louis, Mo. On January 15, 1929, the postmaster general issued a fraud order, closing the mails to the Great Western Drug Company, the Western Drug Company, and W. D. Company.—*Journal A. M. A.*, Feb. 2, 1929.

Cardiac Failure in Pneumonia

Considerable comment has appeared in medical literature on the incidence of cardiac failure in pneumonia. There is unanimous opinion that while cardiac failure does not account for all deaths from pneumonia it is responsible for a large majority of them.

In pneumonia, a frequently fatal disease, the heart bears a large share of the burden. Pneumonia is a septicemia. The toxins have a deleterious action not only upon the heart but upon other vital structures, especially the liver and th ekidneys. The pathological changes occurring in the heart muscle in pneumonia vary from cloudy swelling and fatty changes to an acute infectious endocarditis. Auricular fibrillation, tachycardia and premature beats may be noted. We should listen at each visit to the aortic valves to detect an early aortic lesion. The heart, because of these organic and functional changes, must be protected throughout the disease and during convalescence. The best protection that can be urged is rest, as complete rest as possible. The patient should be kept flat in bed; frequently, the head of the bed may be moderately elevated. He should be allowed to carry out no voluntary activity whatsoever. He should be fed, bathed, and all acts of

excretion made as easy as possible by a constant attendant. There is considerable question as to the advisability of even the physician turning the patient frequently for examination of the posterior chest during the height of illness. It is superfluous to say that pneumonia patients should never be transported or removed even from one bed to another. Morphine sulphate should be given often enough and in sufficient dosage to control coughing and to produce rest. Toxins should be diluted by forcing fluids, and by daily evacuations. There is divergence of opinion as to the use of digitalis. Many authorities advise strongly against the use of the drug. If the cardinal point of rest is kept in mind throughout the course of disease, and throughout convalescence, it is quite probable that many lives will be saved.—*M. C. B.*

Accidents with Local Anesthetics

The investigation of accidents following the use of local anesthetics, instituted by the Therapeutic Research Committee of the Council on Pharmacy and Chemistry of the American Medical Association, has had many practical results. The reports were published in 1920 and 1924; now, André Klotz, of the Strasbourg Hospital, has published the results of an extensive study of the literature on this subject. He agrees with the American committees that accidents are due mainly to overdosage, to injections of cocaine, to the use of solutions of too high concentration, to excessive doses of epinephrine, and a smaller number to peculiar conditions of the patient that are beyond evaluation by the physician. The investigations of the American committees and of Klotz have thrown much light on the causes of avoidable accidents with local anesthetics, but it is obvious that many surgeons continue to disregard the warnings that have been published. The report of Klotz emphasizes the importance that physicians should continue to coöperate with the Permanent Committee for the Study of Toxic Effects of Local Anesthetics of the Therapeutic Research Committee.—*Journal A. M. A.*, May 18, 1929, p. 1680.

Gorgas Prize Award

President Hoover, on May 23, awarded the Charles R. Walgreen prize of $500 for the best essay on "The Life and Achievements of William Crawford Gorgas and Their Relation to Our Health" to Gertrude Carter Stockard, Mountainburg, Crawford county, Arkansas. The essay contest, conducted under the auspices of the Gorgas Memorial Institute, was nationwide in its scope, and was participated in by one out of every hundred junior and senior high school students, and by 34 states of the Union. The national judges were: Honorable William J. Cooper, U. S. Commissioner of Education; Surgeon General Hugh S. Cumming, U. S. Public Health Service; Dr. F. H. Martin, Chicago, president, American College of Surgeons.

More Nostrums

Because asthma and hay-fever do not immediately threaten life, many sufferers have the idea that it is not necessary to see a doctor and that they can treat themselves with something from a drug store.

Dr. Arthur J. Cramp, director of the Bureau of Investigation of the American Medical Association, analyzes, in *Hygeia* for June, thirty-one products that have been or are at present being exploited to sufferers from hay-fever and asthma.

The analysis shows that most of these alleged remedies contain either potassium iodide or an arsenic mixture, or both.

A typical nostrum is "Tucker's Asthma Specific," which declares on the label the presence of five grains of cocaine to the fluid ounce. The manufacturers claim that the cocaine is destroyed by other chemicals in the formula. Various analyses show that it does contain cocaine, but the sale of the product has not been prohibited by the government, although it violates the Harrison narcotic law. On the other hand, if it does not contain five grains to the ounce it violates the food and drugs act. For reasons not clear, neither the Treasury Department nor the Department of Agriculture has proceeded against this nostrum, one learns from Dr. Cramp's atricle.

Ovoferrin Omitted From N.N.R.

Ovoferrin is a solution containing 5 per cent of an artificial protein product in which iron is present in the so-called organic, or masked, form. This product was accepted for New and Non-official Remedies in 1905. From the time of its acceptance, members of the Council have questioned its value, mainly on the ground that it presents no demonstrated superiority to the standard U.S.P. iron preparations. Ovoferrin is a survival of the now obsolete theory that iron in non-ionized form should be more efficient therapeutically than the ordinary iron preparations. The Council on Pharmacy and Chemistry voted to omit Ovoferrin from New and Non-official Remedies because it is an unscientific and superfluous mixture.—*Journal A. M. A.*, May 4, 1929, p. 1521.

The Rental of Radium

The Council on Physical Therapy publishes a report on the rental of radium, which was approved by the Council on Pharmacy and Chemistry. The Council points out that during the last few years some of the firms supplying radium, as well as a few individual radiologists, have undertaken to prepare and to furnish radium to physicians on a rental basis. Rental has not been limited to radiologists, who might be expected to know how to make proper use of the radium, but the intent of this service is to enable any physician to treat his own patients. The Council feels that the rental of radium to physicians can not be entirely condemned; but, since the physician renting the radium must assume full legal and moral responsibility for the diagnosis and treatment of his patients, the Council does condemn the system of "mail-order" and telephone diagnosis and the type of treatment with which such rental has come to be associated.—*Journal A. M. A.*, May 18, 1929, p. 1678.

HOSPITAL NEWS

X-Ray Film Storage

Requests for extra copies of June 15 *Hospital Management*, containing twelve pages of pictures, reports and information concerning the Cleveland Clinic disaster and recommendations for proper handling and storage of non-safety x-ray film, and comments on this material were received from hospital executives, state officials and others in widely different parts of the country.

Other evidence of the concern that non-safety films are giving hospital administrators also was given at the MacEachern round table of the American Hospital Association, where so many questions were asked that many had to be left unanswered because of lack of time.

A show of hands at this session indicated that more than one third of the hospitals represented had changed to safety film recently. A group of Boston hospital administrators, however, emphasized the fact that all of the larger hospitals of that city had been using safety film with complete satisfaction for about five years.

M. B. Hodgson, medical department, Eastman Kodak Company, introduced the subject of proper handling and storage of non-safety film at this session with an illustrated talk featuring the film storage room of the Highland Hospital at Rochester, which embodies all the recommendations of manufacturers and fire underwriters, including fireproof doors, a location on the roof, sprinklers, vents, etc.

Mr. Hodgson indicated that an effort was being made in New York and Chicago to establish a collection service to remove old films from hospitals.

Some of the comments made during the discussion were:

The use of safety film will have its effect on lowering the cost of fire insurance in hospitals.

There is no need to keep films in New York state, from the standpoint of legal requirements, after six years.

In answer to a question as to the value of water in extinguishing film fires, it was said that the films should be deluged with water.

Safety film gives exactly the same images as non-safety, said Mr. Hodgson, although it has a tendency to curl and will crack easier than non-safety film.

The state of Ohio, in which the Cleveland Clinic disaster occurred, called a meeting of the hospital administrators at Columbus July 1 to consider regulations for the handling and storage of non-safety film. This conference was called by T. C. Devine, chief of the division of factory and building inspection of the department of industrial relations. Mr. Devine's report of his investigation of the condition in the Cleveland Clinic appeared in June 15 *Hospital Management*.

The state of New Jersey, among others, is conducting an extensive survey of conditions in hospitals relative to film storage, according to the following statement by William J. Ellis, commissioner, Department of Institutions and Agencies:

"The New Jersey Hospital Association has joined forces with the New Jersey State Department of Institutions and Agencies, which is conducting a survey of x-ray departments and their safeguards from fire hazards in all New Jersey hospitals, sanatoria, and institutions. Covered by this survey will be 74 general hospitals and 31 private hospitals and sanatoria, 2 state and 6 county hospitals for the insane, 1 state and 11 county sanatoria for the tuberculous, and 5 state institutions for the feeble-minded and epileptics.

"In conjunction with a special survey committee of the New Jersey Hospital Association, the research division of the department of institutions and agencies drew up a questionnaire which is designed to bring out the essential facts which, when combined and analyzed, would yield a complete picture of the prevailing situation in this state.

"The following are the main items in this x-ray department questionnaire:

"Location of x-ray departments.

"Building construction of x-ray departments.

"Storage of films.

"Type of pipe lines passing through x-ray storage rooms.

"Type and number of films in use.

"Type of fire protection in x-ray departments.

"The department is planning to tabulate and analyze the data received and on the basis of it make certain recommendations which will reduce fire hazards from x-ray films to the lowest possible minimum."

Emil Frankel, Ph.D., director of research of the department, is conducting the study.

The Department of Commerce, bureau of standards, has taken cognizance of the dangers of x-ray film fires and explosions, and at the recent fireman short course at the University of Illinois a representative of the bureau gave a talk on safeguarding the storage of photographic, x-ray, and motion-picture films.

H. G. Ehret, safety director, factory and building inspection division of the Department of Industrial Relations of Ohio, sent *Hospital Management* a copy of the report by an industrial analytical chemist of tests on films from the Cleveland Clinic which were sent to Ohio State University by the department. This indicates that film does not explode immediately, but requires from fifteen minutes to an hour, when it explodes with the generation of a great deal of gas.

D. J. Demorest, the chemist, in his report, said: "These films explode spontaneously at a temperature very slightly above the boiling temperature of water and do not need the aid of a spark or flame. While the immediate deaths in the hospital were undoubtedly due to carbon monoxide, I am strongly of the opinion that the numerous after-deaths were largely due to the coating of insoluble toxic tar, which must have coated the air passages of the lungs of those that breathed the gas."

Dr. W. H. Smith, Johns Hopkins Hospital, is among the many who have decided to change to safety film. "We have come to the conclusion that they (non-safety films) present too great a hazard to be used in a large hospital where they must be used in considerable quantities," he said, "because we do not feel that the storage of large quantities of these films anywhere within the buildings where they are easily accessible a great deal of their value is lost. We have decided to change to the acetate film. We use the same vault which we have formerly used for the storage of films. The vault is fireproof, 10x9x26 feet. At one end of the vault is a large vent, 4x8 feet, and this is of practically the same size through to the roof. The vault is also equipped with a sprinkler system and an automatic fire door inside and a steel fire door on the outside. We have decided, furthermore, not to attempt to keep the films longer than six years, even though we use the acetate film, because in our judgment 90 to 95 per cent of the films, once interpreted and recorded on the history, are not referred to again."

Dr. C. S. Woods, superintendent, St. Luke's Hospital, Cleveland, says that following the disaster in the Cleveland Clinic he transferred films to a building apart from the hospital, "where they are to remain until the authorities instruct us concerning the permanent housing of them."

"Our buildings are new," he said, "and the requirements of the fire underwriters and building inspector have been met in so far as we know in every detail.

"Our storage room has the following features:

"The film storage room is located on the ground floor of the central building.

"It has but one door opening off the film viewing room. Therefore, it is not directly connected with the main corridor.

"The door to the film storage room is a fire door.

"The film storage room has an approved sprinkler system.

"The electric lights are controlled by switch located in film viewing room.

"The electric-light bulbs in the film storage room are enclosed in glass cases.

"There are 18 cabinets of fireproof construction housed in the film storage room, in which the films are stored.

"Each cabinet will accommodate approximately 3,000 films.

"Each cabinet is divided into four separate compartments. Each compartment has a self-closing door. The compartments are designed so that there is a circulation of air about the films.

"Each cabinet has a vent which is connected to the main vent from the film storage room which goes, independent of any other ventilation system, directly to the top of the chimney.

"In other words, the theory is that one cabinet might burn without injury to the other cabinets.

"All the work is done in the very best and approved manner which has been approved by all the various and customary authorities."

Hackensack Hospital, Hackensack, is among the institutions which called attention in their monthly bulletins to the fact that safety film is used in that institution. St. Alexis Hospital, Cleveland, called attention to its precautions in handling and storing film in its June *Hospital News* also.

Colonel R. E. Longan, superintendent, Baltimore City Hospitals, sounded a warning against going to extremes because of the Cleveland disaster. "As usual, after a catastrophe like that in Cleveland," he pointed out, "we do a lot of things in an excited frame of mind, and seldom do the thing we ought to do. We are very easily stampeded. I have no doubt that a great deal of unnecessary expending will be done, and, after all, safety will not be provided. Personally, it seems to me that the use of safety films offers the best security, even though they cost more at the present time. It is very possible that if everybody used safety films exclusively the price could soon be reduced. If the old type of films are to be used the usual safety precautions for any highly inflammable material should be taken, which would include a satisfactory exhaust for gases."

Rev. H. L. Fritschel, Milwaukee Hospital, thus describes general fire precautions at that institution:

"For x-ray films we have a fireproof vault in one corner of the building with window. An automatic window opener releases a certain attachment at a certain temperature and opens the window. The fireproof vault is equipped with sprinklers, and all this is in exact compliance with the regulations of the national board of underwriters.

"Against other fires we have stand pipes with hose attachment, chemical fire extinguishers, and tubes filled with powder. All these are placed in strict accordance with the recommendations of the fire department of our city throughout all buildings. We have annual inspections of our buildings by the city fire department."

"We are selling all of our x-ray films more than two years old for 12 cents a pound," wrote Robert Jolly, Baptist Hospital, Houston, Texas. "Our storage room is on the top floor of the building. We are following the recommendations of the fire underwriters and are putting a vent in the room and also steel shelves. We are going to take every precaution possible."

"Since the Albert Merritt Billings Hospital has opened we have used none but non-inflammable films," said Dr. Ralph B. Seem, director. "The films made for each patient are collected and filed in a paper envelope. These envelopes are kept on steel shelves in a room that is reserved for the purpose. This arrangement has been approved by the board of underwriters. The films for electrocardiograph work are filed in a steel safe that is vented to the outside."

"At the time of the Cleveland disaster we had stored in our record room on open shelves about three years of films," said May A. Middleton, superintendent. "Our röntgenologist says that they were properly protected, since this record room was in a fireproof building and surrounded with fireproof partitions. It also had three windows opening to the outside. However, we have disposed of all these films.

"We are now keeping two years of films in the file room of the x-ray department. These films are kept in steel filing cabinets. The doors of the room are protected with steel plates; there is a steel plate on the window opening into the building; the doors are self-closing.

"Our röntgenologist has photographs made of any films which he feels will be needed for research purposes after the films are two years old.

"The above precautions have satisfied the fire marshal."

"Our x-ray department is located on the top floor of our building," said J. B. Franklin, superintendent, Georgia Baptist Hospital, Atlanta. "The films are stored in a special steel filing cabinet made for the purpose. The rooms in which the films are placed is thoroughly ventilated with doors and windows. We keep the films for a period of three years."

"I invariably recommend to all the institutions for which I act as a consultant that they use non-inflammable x-ray films exclusively, and that where any quantity of the old type explosive films have to be stored, this be done outside the acute hospital building, preferably in a small, detached building for that specific purpose," said Dr. C. C. Burlingame, New York. "It may be necessary to keep small quantities of the old films in the acute hospital building until they become sufficiently out of date to warrant their being stored outside.

"I believe that the only satisfactory solution is to break up into smaller units the housing of the old, explosive type, so that they are not massed together in any one place or stored in sufficient quantities to do any damage in the acute hospital building.

"I doubt very much if there is any device that is sufficiently foolproof to warrant mass storage of

explosive film in an acute hospital building. The human element does enter into the administration of the best-planned and best-constructed hospitals, and automatic devices fail to work because of human interference or human negligence.

"Certainly we could not have had any higher type of professional or administrative ability than existed in Cleveland, and if such a thing could happen under such leadership, I am convinced that the answer is, remove all explosive films entirely from acute hospital buildings, except in such small quantities as to make a catastrophe impossible."

"Two years ago our managers authorized us to purchase only safety films," wrote I. W. J. McClain, superintendent, St. Luke's Hospital, Utica, N. Y. "In addition to the use of these films, we approached the matter of safety in filing and handling as though we were using the dangerous type of films. Not more than 100 exposed films are kept in the hospital building. All in excess of that number are placed in a building erected against the side of the boiler room more than 200 feet from any part of the hospital building. It is our intention to supply a vent from the metal cabinet in which the 100 films are filed, but this installation has not been completed and is the only thing suggested by any of the inspectors who have visited our institution following the Cleveland disaster."

"It has been the practice of the head of the x-ray department to purchase only the acetate base films since they were placed on the market, and it is generally conceded that these films offer no more danger than ordinary paper," said Dr. Louis H. Burlingham, superintendent, Barnes Hospital, St. Louis, Mo. "The comparatively few nitrate base films that we had are stored in a room which is in the top story of our building and is in the nature of an L attached to the main building, has a large amount of glass in one side of it, which would very readily give way if there was an accident, is a fireproof room and is protected by an automatic fire door."

"The article on the Cleveland disaster was very complete and instructive," said Austin J. Shoneke, superintendent, New Rochelle (N. Y.) Hospital. "I read the issue of *Chemical and Metallurgical Engineering*, Volume 36, No. 6, which reports this disaster, and pass on abstracts thereof:

" 'The room in which the film was stored was about 25x20 feet, unsprinklered and without vents to the outside. Most of the films were 14x17 inches and were kept in manila paper envelopes, which were piled on open wooden shelves or placed in ordinary metal letter files. The room was lighted by electric bulbs on pendant cords, some of which hung down directly in front of the film stacks. A 4-inch steam line, carrying a steam supply at 65-pound pressure, also passed overhead through the film room.

" 'Of several investigations of the cause of the disaster, one of most interest from a chemical engineering standpoint was conducted for the city manager of Cleveland under the direction of Dr. R. D. MacLaurin, commissioner of trade wastes, assisted by Dr. M. H. Veazey and Dr. C. H. Saylor, of the division of trade wastes, as well as by M. M. Braidech, chemist for the city water department. The testimony of these men established the fact that an extension cord with a 100-watt electric bulb had been suspended from a two-way socket attached to a steam pipe directly over the wooden film shelves in such a way that the bulb was in direct contact with the films. The extension cord and the bulb were found intact by Dr. MacLaurin in the débris. When replaced in its original position the bulb touched the films on the file 7¼ inches from the floor. It was established by Val. Hausmann, electrical engineer for the city, that both the two-way socket and the switch of the bulb socket were in the "on" position when found.

" 'Braidech and Saylor described tests that seemed to prove conclusively that the electric bulb rather than the steam pipe or escaping steam was responsible for the fire. Films held in contact with the 100-watt bulb ignited in from 2 to 17 minutes. The bulb was shown to produce a temperature of 440 degrees F. It is of interest to note that when the electric light bulb was covered with an ordinary steel guard it failed to ignite films held one-half inch away during a 5-hour test.

" 'In a second series of tests, high-pressure steam at 315 pounds pressure and 150 degrees superheat was discharged into a box containing nitrocellulose films which was held at a distance of 10 inches. The temperature of the steam in the line was 565 degrees F. and at the point of contact with the film it was about 250 degrees F. There was a slight discoloration of the film, but no decomposition, at the end of 10 minutes.'

"This information will be of interest to many superintendents, showing that, even though we are dealing with a great hazard in storing nitrocellulose films, if we recognize this hazard and eliminate the element of carelessness, there is little to fear. The

investigation had proved that there was no spontaneous combustion.

"The regulations of the National Board of Fire Underwriters cover all subjects which might cause a disaster, and every superintendent should familiarize himself with the same, as he can not excuse himself or evade responsibility for the flagrant violation of these regulations."—*Hospital Management*, July, 1929.

Tariff Increase on Oils

A request for the aid of the American Hospital Association in the fight against the proposal to place a tariff of 45 percentum *ad valorem* upon all imported soap-making oils and fats which are now mostly on the free list was laid before the legislative committee at the Atlantic City A. H. A. meeting. "The proposal is being advanced by farm organizations who have apparently been misled by certain manufacturing groups associated with them," says the American Laundry Soap Manufacturers' Association. "The facts are, however, that farmers will be injured far more in their capacity of consumers than they would be aided as producers by the proposal.

"Soap manufacturers are fighting the proposal as a unit. They state that, should the tariff of 45 per cent *ad valorem* be placed on imported oils and fats, it will increase the cost of soap to the consumers at least 50 per cent.

"The estimated expenditures by hospitals for bulk soap for laundry usage, common soap for kitchen and general cleaning, toilet soap for patients' use and miscellaneous soap, such as surgical and castile, is $12 per bed per annum at present prices. Should the proposed tariff on imported soap-making oils and fats be enacted, the increased expenditure per bed for soap which would be required would be at least $6 per annum. On the basis of 1,000,000 beds in American hospitals this would mean an increased expenditure of $6,000,000 per annum. (These figures based on estimate of Stuart Thompson, of the institutional sales department of the Procter & Gamble Co.)

"The imposition of any duty whatsoever upon soap-making oils and fats is unjustified as a measure of protection because, regardless of the amount of the tariff levied, soap makers would be obliged to continue the importation of imported fats and oils. They would be obliged to pay the duties and pass them on to the consumers. This is due to two reasons: First, the imported oils and fats, because of technological characteristics, are for the most part essential in the manufacture of soap; second, there is an actual deficiency of soap-making oils and fat in the United States amounting to 700,000,000 pounds per annum.

"There is no means whereby the inadequate domestic supply of oils and fats capable of being employed for soap-making and other industrial usage could be expanded to adequately supply the demand, because every oil and fat produced in the United States is a by-product with the exception of linseed oil, which oil is practically not used at all in the manufacture of soap. Naturally, no class of producers will run the risk of producing an unmarketable surplus of one or more major products in order to secure for sale a larger volume of a relatively unimportant by-product.

"Soap-making oils and fats should be retained on the free list in H. R. 2667, the tariff bill now pending. They were retained on the free list in the House of Representatives, and if all consumers of soap will oppose vigorously the demand which is being urged upon members of the Senate and the Senate Finance Committee with great energy and vehemence at this time, they will remain on the free list in the Senate bill."—*Hospital Management.*

WOMAN'S AUXILIARY

Report of Annual Meeting

The fifth annual meeting of the Woman's Auxiliary to the West Virginia State Medical Association was called to order by the president, Mrs. R. V. Shanklin, of Gary, W. Va., at 9:30 on Tuesday morning, May 21, 1929, in St. John's Lutheran Church, Martinsburg, W. Va. The invocation was made by the Rev. C. K. Ray, pastor of the Methodist Episcopal Church, South, of Martinsburg. Mrs. G. J. E. Sponseller, also of Martinsburg, on behalf of the wives of local physicians, cordially welcomed the members of the Auxiliary and visiting ladies. Mrs. Brindley Johns, of Morgantown, responded to the greeting.

Telegrams of regret and good wishes were read from Mrs. J. E. Wilson, of Clarksburg, vice-president of the state Auxiliary, and Mrs. Allen H. Bunce, of Atlanta, Georgia, president of the Auxiliary to the American Medical Association, who was prevented by illness from attending the convention. A letter of greetings and welcome from the Martinsburg Chamber of Commerce was read by the secretary. The president announced that the basket

of flowers on the table was a gift from the Chamber of Commerce. The corresponding secretary was instructed to write a letter of thanks and appreciation to the chamber.

The roll was called and the minutes of the last annual meeting were read and approved. This was followed by reports of officers, which showed an active membership of 165 and a balance in treasury of $140.90. Mrs. H. A. Whisler, of Clarksburg, chairman of *Hygeia*, reported a year of hard work with fairly gratifying results. Reports of county Auxiliaries followed.

After the business session, Mrs. Ada Coddington McDermott, of the State Health Department bureau of venereal diseases, gave an interesting and instructive talk on the work being done along this line. Dr. David Littlejohn, also of the West Virginia state health department, gave an interesting talk on the work of prevention being done by the health department and advocating the coöperation of the Woman's Auxiliary.

The afternoon session was devoted to a round table discussion, led by Mrs. S. J. Klumpp, of Huntington, when the various problems of the Auxiliary were freely discussed. This met with an enthusiastic response. Following these discussions, Dr. Harry M. Hall, of Wheeling, president of the State Medical Association, gave a very delightful paper, "Why the Doctor?"

The first "President's Night" of the Woman's Auxiliary was observed Tuesday evening in St. John's Lutheran Church at 8 o'clock, with Mrs. S. J. Klumpp presiding. The program included a vocal solo, "Wake Up," by Mrs. Roger E. Clapham of Martinsburg, and two papers, one by the president, Mrs. R. V. Shanklin, whose subject was "The Woman's Auxiliary to the Medical Association," in which she outlined the purpose of the Auxiliary. The second paper was read by Mrs. D. P. Cruikshank, of Lumberport, and told the story of Jane Crawford.

At the conclusion of the program the president was presented with an inscribed gold pendant from the Auxiliary as a token of appreciation for her year of service.

WEDNESDAY, MAY 22

Unfinished business was resumed on Wednesday morning. In the order of new business, the convention voted to form two new committees, one for historical collection, to collect and preserve information relating to the medical profession and auxiliary, county and state, this to be collected by the county organizations and sent to the state (such as are deemed valuable) for historical reasons. In connection with this, a scrapbook of information of interest to the Woman's Auxiliary will be kept. The second, an advisory committee, composed of three physicians (members of the medical society), to be appointed by the president of the state medical association, to act as advisors for the Woman's Auxiliary.

Officers elected for the coming year were as follows: President, Mrs. W. C. Swann, Huntington; first vice-president, Mrs. H. G. Camper, Welch; second vice-president, Mrs. S. S. Hall, Buckhannon; third vice-president, Mrs. A. H. Hoge, Bluefield; recording secretary, Mrs. Brinley John, Morgantown; treasurer, Mrs. E. B. Henson, Charleston.

Following the election of officers, Dr. R. H. Paden, director of child hygiene of the state health department, gave an interesting talk, asking the coöperation of the Woman's Auxiliary with this branch of the state health work. Following Dr. Paden's address, Mrs. J. P. Lilly, of Morgantown, president-elect of 1928, was installed president of the Woman's Auxiliary to the West Virginia State Medical Association for the year 1929-30, and the newly elected officers were introduced to the convention.

The meeting adjourned, to meet at White Sulphur Springs in May, 1930.

Martinsburg does not have an auxiliary, but a social committee, formed for the occasion and composed of the wives of all the local physicians, with Mrs. A. Bruce Eagle as chairman, rendered most valuable assistance to the convention. Special mention should be made of Mrs. George O. Martin, secretary of the committee, who took charge of the auxiliary registration in the absence of Mrs. J. B. Dodrill, of Buckhannon, who was unavoidably prevented from coming.

Too much can not be said in appreciation of the fine hospitality and attention shown the visitors. On Tuesday afternoon, from four to six, a beautiful tea was given at the Opequon Golf Club, followed by a short drive to some of the beauty spots around the city.

Wednesday afternoon, a drive to Antietam, Sharpsburg and other historic and attractive sites was thoroughly enjoyed. The annual banquet and dance on that evening, at the Shenandoah Hotel, were delightful in every detail. The guests left with the feeling of having thoroughly enjoyed the whole convention and hoping to return at a not far distant date.

The West Virginia Medical Journal

Directed and Edited by the Committee on Publication

[The Committee on Publication is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible]

JAMES R. BLOSS, *Editor-in-Chief* - - - - - - - - Huntington

ASSOCIATE EDITORS:

WALTER E. VEST, Huntington — HARRY M. HALL, Wheeling — J. HOWARD ANDERSON, Marytown — C. A. RAY, Charleston

MR. JOE W. SAVAGE, *Secretary-Business Manager*, Charleston

Entered as Second Class Matter, January 1, 1926, at the Postoffice at Charleston, West Virginia

Vol. XXV — SEPTEMBER, 1929 — No. 9

THE DIAGNOSIS OF TUMORS OF THE SPINAL CORD *

By D. A. MACGREGOR, M.D.
Wheeling, W. Va.

The diagnosis and accurate localization of spinal cord tumors present one of the most intriguing and difficult problems in modern medicine. Frazier states that an average time of two and two-fifths years elapses before a definite diagnosis is made in the cases of spinal cord tumor. This is at once a rebuke and a challenge to the rank and file of the profession.

The increased interest in the study of this subject dates back to 1887, when Sir Victor Horsley performed the first successful laminectomy for cord tumor. The tumor proved to be a myxofibroma of the sixth and seventh dorsal segments. Since that time there has been a steady and gratifying increase in the frequency with which spinal cord tumors have been recognized.

Spinal cord tumors are relatively rare; their exact incidence is unknown. They approximate 1½% to 2% of all neoplastic lesions. Schlesinger, during a career of service extending over a period of nineteen years at the Allegmeine Kränkenhaus of Vienna, reports one hundred thirty-five cases of spinal cord tumors in a grand total of 35,000 autopsies. This corresponds to an incidence of .38%. From an entirely theoretical and statistical viewpoint, it may then be assumed that not more than one person in 250 or 300 will have a spinal cord tumor.

Cord tumors occur most frequently between the ages of thirty to fifty years. However, these tumors may occur at any age. In Adson's series, the ages varied from twelve to sixty-five years. It was formerly thought that tumors of the spinal cord were exceedingly rare in children. It was true that these lesions—or at least their diagnosis—would appear to be infrequent, as only nine cases were reported in the literature up to July 6, 1928. At this time, Stookey cited eight additional cases of spinal cord tumors in children ranging from three to twelve years.

Tumors of the spinal cord may be conveniently classified, with respect to their relation to the dura and cord, into three great groups:

1. The extradural or paravertebral tumors, lying outside the spinal dura mater.
2. The intradural, extramedullary tumors lying within the dura mater but outside the substance of the spinal cord.
3. The intradural, intramedullary tumors lying within the substance of the cord.

The relative frequency of these groups of tumors has been fairly well established. By far the most numerous and certainly the most amenable to surgery are the intradural, extramedullary group.

* Oration on Medicine delivered before the West Virginia State Medical Association at Martinsburg on May 22, 1929.

From the Division of Medicine, Wheeling Clinic, Wheeling, W. Va.

These constitute approximately 70% of all cord tumors. The extradural and intradural intramedullary tumors have about an equal incidence of 15% each.

The intradural extramedullary group of cases affords by far the best prognosis. These tumors are generally benign, well encapsulated, and therefore susceptible to surgical removal. They arise from the inner surface of the dura mater, from the pia-arachnoid membrane, from the nerve roots or blood vessels.

The intramedullary group of cord tumors present the most gloomy prognosis. They are generally malignant and are often metastatic. The most common varieties are gliomata, sarcomata, and tuberculomata.

Extradural cord tumors have their origin from the vertebræ, meninges, epidural fat, nerve roots, fibrocartilages, or ligaments. The greater number of the tumors of this group are malignant and so their prognosis is poor. However, chondromata, osteomata, neurofibromata, and fibromata are found and may be extirpated.

Spinal cord tumors may be found at any level of the cord. Apparently they manifest no particular predilection for any special section of the cord. Thirty-five per cent are found in the cervical cord, where there are eight segments; fifty per cent are found in the thoracic cord, which is composed of twelve segments, and the remaining fifteen per cent are found in the lumbar region, where there are five segments. It will be noted that tumors appear with a frequency proportionate to the number of segments in the various portions of the cord.

The symptomatology of tumors of the cord in any stage of their development depends upon a variety of factors:

(*a*) The situation of the tumor, whether upon the anterior or posterior aspect of the cord.

(*b*) The level of the tumor in the cord, whether in cervical, dorsal, lumbar or sacral divisions.

(*c*) The degree of cord compression.

(*d*) The diameter of the vertebral canal at the level of compression.

(*e*) The size and character of the tumor, whether benign or malignant, whether rapid or slow growing.

(*f*) The degree of interference with lymphatic and vascular supply of the cord.

(*g*) The type of lesion, whether extradural, intradural-extramedullary, or intramedullary.

The first step, and the most important step, in arriving at a diagnosis of cord tumor is the taking of a most thorough and detailed anamnesis. Perhaps the most significant detail in a cord tumor history is the steady progression of sensory and motor symptoms. The chronology of their development frequently gives the first clue to the diagnosis.

From a chronological viewpoint, the symptoms of cord tumors may be discussed in three stages, namely:

1. The irritative stage.
2. The stage of beginning compression.
3. The stage of marked compression.

The irritative stage is the longest, and it is here that the symptoms are most often misinterpreted. Diagnoses are seldom made during this phase, as it generally precedes any gross objective signs and manifestations. If the tumor be posteriorly situated, as it most frequently is, and so impinges upon the posterior nerve roots, pain, paresthesia, and dysesthesia result. The character of the pain may be dull, lancinating, boring, tearing; there may be burning, tingling, and formication. If the posterior columns of the cord are involved, numbness and tingling of the toes may appear. If the tumor is laterally situated, irritation of the spinothalmic tracts frequently produces a sensation of "needles and pins" below the level of the lesion, on the opposite side of the body. It is a matter of no surprise to learn that herpes zoster may be an early sign of spinal cord tumor. It is simply an evidence of radicular irritation.

It is interesting to note that pain and paresthesia may be the only symptoms for months. The persistence and constancy of these pains and their stubborn resistance to the usual therapeutic measures should convince one that he is dealing with something more than the ordinary peripheral lesions, neuritis, neuralgia, sciatica, lumbago, or myositis. In lesions of the cervical cord, the pains or parasthesiæ may be manifest in the dermatomes of the upper extremities. They may closely simulate an intercostal neuralgia when the tumor is in the upper or mid-dorsal cord. Likewise, a sciatic neuritis may be diagnosed in certain tumors of the lumbo-sacral segments or cauda equina. It is not infrequent that diagnosis of organic visceral disease have been made in these cases. It is a matter of record that tumors of the eighth or ninth dorsal segments have caused laparotomies for suspected cholelithiasis, while tumors of the twelfth thoracic segment have occasioned a diagnosis of hip-joint disease.

While pain and parasthesiæ are most frequently the earliest presenting symptoms in tumors of the spinal cord and may give the first hint as to the level of the lesion, they are by no means invariably present. Until quite recently it has generally been held as axiomatic that in the absence of pain there can be no cord tumor. It is now a well-known fact that spinal cord tumors may occur without pain or sensory phenomena. If the cord tumor be anteriorly placed, instead of root pains and parasthesiæ there may ensue indications of motor root or anterior horn irritation. These may consist of slight atrophy, mild fibrillations, a hardly apparent muscular tremor, or an incipient weakness of the muscles supplied by the involved segment.

The second stage in the evolution of cord tumors is that of a beginning compression. During this stage, gross sensory and motor manifestations appear and the diagnosis is more readily made. Naturally, the neurological findings in a given case are determined by the location of the tumor and the amount of pressure exerted on the various tracts of the cord. Occasionally the classical Brown-Séquard syndrome is encountered. In such cases there are spasticity and increased deep tendon reflexes with loss of vibratory and position sense on the side of the tumor, and loss of pain and temperature sense on the opposite side. This unusual picture can be readily understood when the course and functions of the various tracts are recalled, but it must be confessed that such a clear-cut syndrome is rarely seen in actual practice.

As a rule, below the level of the tumor, the deep tendon reflexes are lively or exaggerated, and the superficial reflexes, such as the upper and lower abdominals, and the cremasterics are absent or pathologically altered if the tumor lies above the ninth dorsal segment. Sphincteric disturbances may be slight or absent while there is only moderate compression. If present, there may be constipation and some urgency of urination. Incontinence upon exertion is especially significant.

In the third and final stage of cord tumors, characterized by marked compression, there is a complete blocking of all sensory and motor tracts of the cord. The clinical picture which results is almost identical with that of a complete transverse myelitis. The muscular weakness or paresis of the second stage has progressed to complete motor paralysis. The patient who formerly noticed a weakness of his lower extremities and ataxia is now perhaps confined to bed, paralyzed and unable to walk or even to elevate his lower extremities from the bed. The paralysis may take the form of a monoplegia, paraplegia, hemiplegia, or even quadraplegia, depending largely upon the site of the cord tumor and the degree of cord compression. Hypertonicity and spasticity of all the muscles supplied by segments below the level of compression are marked. All the deep tendon reflexes below the level of the tumor are exaggerated. The superficial reflexes may be abolished. The Babinski and its modifications, the Oppenheim, Gordon, Chaddock, Schaefer, are all present. Patellar and ankle clonus are common. There is complete abolition of all forms of sensation below the level of compression, touch, pressure, pain, temperature, and vibratory sensibility. The sphincters no longer function; the patient is obstinately constipated; he may be unaware of an evacuation of his bowels. There are dribbling and incontinence of urine as a result of overflow from a large, atonic bladder which can empty itself only partially. The muscular spasm of the erector spinæ which is usually noted fairly early in the course of the disease may now be extreme. There may be a rigid, so-called "poker spine." In the course of time, lateral curvature may result. Ultimately, as the compression advances, marked atrophy, decubitus and trophic ulcers, edema of dependent parts develop and the patient dies, often of some intercurrent terminal infection.

When the history and chronology of events indicates the probability of a spinal cord tumor, or at least a focal lesion causing spinal cord compression, it then becomes imperative to attempt exact localization of the lesion. The complete physical and neurological examination still remains the most reliable method of localization, despite the addition in recent years of many useful mechanical aids to localization.

In the examination of the sensorium, it is our aim to determine the uppermost level of sensory alteration. This sensory level, which is a definite line of demarcation between the normal and altered sensorium, is the most dependable sign for estimating the segmental level below which the cord and its root branches manifest evidence of disturbed function. All modalities of sensation, touch, pain, temperature and vibratory sensibility are tested. In determining the uppermost level of sensory aberration, it is not the purpose to discover the limits showing complete anesthesia; rather it is the intention to define the topmost zone in which there occurs the slightest diminution in the acuity of sensory impressions. This sensory level indicates fairly accurately the site of the tumor in intramedullary

tumors; it is not quite so accurate in determining the sites of extramedullary and extradural tumors. Usually the tumor is found at laminectomy to be one to three segments higher than is indicated by the level of sensory changes. The possibility of error is increased by the fact that in extramedullary tumors the distal spinal segments are more completely compromised, so that at the actual level sensation is least impaired, if the degree of compression is not great. Another reason for the false localization of tumors exists in the circulatory disturbances and edema of the cord segments proximal to the site of the compression. In this instance, there is too high a localization of the tumor, due to irritative phenomena excited in the cord segments above the focal lesion.

As a tumor grows and compression increases, the level of sensory changes gets higher and higher on successive examinations, and finally the progress of sensory changes stops at or near the level corresponding to the cord segment involved.

In those cases wherein the sensory level is vague and indefinite, despite a minute sensory examination, it will frequently happen that the withdrawal of seven or eight cubic centimeters of spinal fluid will cause a definite accentuation of the level of sensory disturbance, by altering the position of the tumor and increasing the pressure on the cord.

For purposes of localization the sensory level is not quite as reliable as the motor symptoms, because of the fact that the crossing of the spinothalamic tracts, conveying pain and temperature, requires one or two segments in the thoracic region and four or five segments in the cervical portion of the cord. The sensory level, then, indicates a site one to five segments lower than the actual lesion in unilateral involvement.

In the examination of the motor system fibrillary twitchings should be noted if present. These indicate an irritation or degeneration of the anterior horn cells and afford valuable evidence of involvement of their segments of supply. Myoclonus due to anterior root compression is another valuable level indication. Hypertonicity of the musculature exists in spinal cord tumors compressing the pyramidal tracts. Flaccidity and loss of muscular tone present in conus and cauda equina tumors. Muscular weakness or paralyses are to be recorded. Thus, an Erb's palsy of an upper extremity may indicate compression of the fifth and sixth cervical segments or the motor nerve roots issuing from them by tumor.

The examination of the reflexes, both superficial and deep, is of much assistance in localization. Generally speaking, disturbances in reflexes are of two kinds—those due to irritation or compression of the cortico-spinal or pyramidal tracts, and those due to irritation or degeneration of lower motor neurons. In the former, there are hypertonicity, increased response, no atrophy, increased deep tendon reflexes and absent superficial reflexes below the level of compression. The Babinski and its numerous modifications, the Oppenheim, Gordon, Schaeffer, and Chaddock signs, may be present if the compression is exerted above the lumbar enlargement of the cord. There may exist ankle and patellar clonus. If the cord tumors cause compression above the fifth cervical segment, two additional signs of pyramidal compression are elicited. These are the Hoffmann sign, the so-called Babinski of the upper extremity, and the Klipple-Weil sign. The former consists of a flexion of the terminal phalanx of the thumb when the nail of the index or middle finger is briskly pinched and snapped. The Klippel-Weil sign consists of the flexion of the thumb into the palm when the patient's contracted fingers are extended by the examiner. Of all the superficial reflexes, the abdominals are most important. If the upper and lower abdominal reflexes are normally present, their very presence often precludes the possibility of pyramidal tract compression by tumor above the level of the lumbar region.

Before conclusion of the neurologic examination, the vasomotor and pilomotor manifestations in a suspected case of cord tumor should be investigated. It has only been within the past few months that Temple Fay, of the University of Pennsylvania, has reported thirteen cases of spinal cord tumors or focal lesions wherein the upper limit of vasomotor and pilomotor phenomena accurately corersponded to the upper level of the lesion as disclosed by operation or x-ray. Indeed, Fay contends that the vasomotor level is much more accurate for purposes of localization than the sensory level.

In the examination for vasomotor and pilomotor responses, such qualities as hyperemia, ischemia, sweating, "goose flesh," and consistency of skin are remarked. The patient should be freed from all constricting or irritating clothing. After a rest in bed, the covering is quickly removed. The entire body should be inspected in diffuse daylight of moderate intensity at a distance from three to six feet from the patient. An area of vasomotor flushing or hyperemia may be seen separating the normal from

the abnormal dermatomes. The actual line of demarcation may be tenuous, thin, and serpentine, at right angles to the body. In long-standing cases there may be a sunburned tint to the skin below the level of the lesion. At times, in cases of over three months' duration, two vasomotor levels may appear. The superior of the two indicates the highest level of root irritation; the inferior line, characterized by pigmentation, corresponds to the level of beginning objective sensory disturbances. This vasomotor line of hyperemia may be intensified by the application of moist heat in the form of a hot towel for five minutes to the body. The hyperemic line then persists for some minutes after the removal of the towel.

The pilomotor reflex is obtained by one of several methods. Flicking the integument of the patient with a cool towel, or moistening of the skin and subsequently placing the patient under an electric fan, may be tried with success. Thomas' test of pinching the skin and Trapezius muscle at the base of the neck will cause a homolateral pilomotor reflex. Any of these maneuvers will serve to cause the appearance of "cutis anserina" or "goose flesh" in the normal dermatomes with abolition of the phenomenon below the level of segmental compression.

To date, these vasomotor and pilomotor reflexes have been found only in focal lesions, such as tumors or adhesions, causing cord compression. They often make their appearance prior to the development of any focal sensory or motor symptoms. The objections to the vasomotor manifestations are that they are transient, that their demonstration requires much skill and ingenuity, and that fine discrimination must be used in the interpretation of their absence or presence.

After the neurologic examination, the next step in the diagnosis of spinal cord tumors is the performance of lumbar puncture and manometric study of the spinal fluid pressure. These maneuvers should constitute a routine and integral part of the general examination. Their purpose is to determine the presence or absence of subarachnoid block. Inasmuch as spinal cord tumors constitute the most common cause of subarachnoid block, if such a block is demonstrated, it strongly suggests the presence of a cord tumor.

It was Queckenstedt, in 1916, who observed that such acts as compression of the cervical veins, blowing the nose, coughing, deep breathing, or straining would cause an instantaneous rise in the cerebrospinal fluid pressure. Recently, Stookey, of the New York Neurological Institute, has conclusively shown that there is a dual mechanism in the increase of cerebrospinal fluid pressure in these maneuvers. In compression of the cervical veins, the increase in cerebrospinal fluid pressure is due alone to increased intracranial pressure and interference with the cerebral outflow; however, in coughing, straining, deep breathing and the like, in addition to the interference with cerebral outflow, there is another element. These acts, by inducing increased intrathoracic and intraäbdominal pressure, interfere with the vertebral venous circulation. This explanation will suffice to account for the rise in the manometer in complete block, where, although no rise is obtained from jugular compression, a slight rise is experienced upon straining, because of the increased spinal fluid pressure component distal to the site of tumoral compression.

The actual procedure for gauging the manometric pressure of the spinal fluid is as follows: Lumbar puncture is done at the usual site, and the water manometer, graduated in millimeters, is connected with the lumbar puncture needle. After five minutes, a constant or stable fluid level is obtained and recorded. Then in succession, three maneuvers, light compression, deep compression, and straining, are performed. So as to decrease the possibility of error, each test maneuver should be twice repeated. Manometer readings should be made every ten seconds and subsequently charted.

Light or touch compression consists of a mere flick of the jugular veins. This test requires two or three seconds. The normal response is an instantaneous rise of from ten to thirty millimeters, followed by as prompt a fall to the original level. This test is in reality more dependable than deep compression, inasmuch as it avoids resistance and defense mechanisms. If a normal response to light compression is found, as a rule the response to deep compression and straining are normal.

In deep compression, the jugular veins are compressed for five or ten seconds to the point that cyanosis of the patient's face may appear. The normal response consists in an immediate and continuous rise in pressure to about five hundred millimeters. An equally rapid and continuous drop to the original level should follow release of compression. The patient must be reassured and cautioned against defense movements.

In straining, the patient is requested to strain as if going to stool, for a period of ten seconds. The normal reaction is a rise of two hundred to five

hundred millimeters in pressure. When the patient stops straining a prompt fall in ten seconds to the original fluid level should result.

Abnormal responses to the three tests occur in subarachnoid block. These abnormal responses are either complete or incomplete. In complete subarachnoidal block, upon jugular compression there is either no rise at all or a minimal rise of thirty to sixty millimeters in cerebrospinal pressure. Manometric studies in complete blocks generally present only confirmatory evidence to the neurologic examination.

On the other hand, the manometric studies in incomplete subarachnoid blocks are more than merely confirmatory. In connection with history and neurologic examination, they permit earlier diagnoses. Thus, earlier operative interference and more certain return of cord function can be expected. Stookey has classified the types of response to jugular compression in incomplete subarachnoid block into five groups. They are:

1. Sudden rise, but a hanging or slow fall to a higher new level.
2. An irregular, slow rise, with a sudden fall to the original level.
3. An appreciable initial halt, then a prompt fluid rise and fall.
4. A delayed and labored rise and fall (?).
5. A smooth but somewhat delayed rise and fall (?). (Four and five are questionable for any degree of block.)

The value of manometric study of the spinal fluid in suspected cases of cord tumor can not be questioned. In a series of fifty cases, Stookey found no single instance of extradural or intradural extramedullary tumor when the manometric readings were negative. Very early intramedullary tumors, especially those of the conus medullaris, may, however, give a normal or negative manometric reading.

Occasionally a case is encountered wherein the history and symptoms are vague, the neurologic findings indefinite, and the lumbar manometric readings are merely suspicious. Such a case affords an ideal indication for the use of combined puncture as promulgated by Ayer of Boston. In accordance with this test, both a cisternal and lumbar puncture are done, and manometers are attached to each of the two needles. In cases of complete spinal subarachnoid block, upon jugular vein compression there is a normal elevation of 450–550 mm. in the cisternal manometer and no rise or a minimal rise of sixty to seventy millimeters occurs in the lumbar manometer. In incomplete spinal subarachnoid block the rise in the lumbar manometer is always much less than the corresponding rise in the cisternal manometer upon jugular compression. Normally, the fluid pressure in the cistern is five millimeters higher than in the lumbar sac.

A system of relay lumbar punctures has been devised for a more accurate localization of the sites of cord tumors. In this method multiple spinal punctures are done in series, one after the other, proceeding toward the occiput until eventually a level is reached where the response to jugular compression is normal. This level would correspond to a site just above the area of cord compression. Such a method of localization is only approximately correct. It presents the serious possibility of injury to the cord by the frequent punctures.

In recent years certain mechanical aids to the localization of cord tumors by x-ray have been in vogue. These have been of two varieties, either the injection of a relatively inoffensive opaque substance or the injection of air into the spinal subarachnoid space. The fluoroscope or x-ray subsequently discloses the position of the opaque medium or air.

In 1921, Sicard and Forestier reported the use of lipiodol in localization of the exact sites of the spinal cord tumor. Lipiodol is a 54% solution of iodin in a vegetable oil. There are two varieties of lipiodol—a "lipiodol ascendens," with a specific gravity less than that of the spinal fluid, and "lipiodol descendens," with a specific gravity greater than that of the spinal fluid. One to two cubic centimeters of the descending lipiodol may be injected into the cistern with the patient recumbent. The patient's head should then be gradually elevated and the progress of the oil noted under the fluoroscope; the ordinary röntgenogram may fail to show a partial block or an interruption of the progress of the oil, so the fluoroscope should be used. If a tumor of the cord is present, a dark shadow in the figure of a half-moon or an inverted meniscus will be seen above the tumor. Shugrue has suggested the use of ascending lipiodol, to be injected into the lumbar sac along with the use of descending lipiodol as given ordinarily by cisternal puncture. In this way, both the upper and lower limits of the tumor are defined.

There are several objections to the use of lipiodol. It is very viscid, and so has a tendency to adhere to the nerve roots and thus give false evidence of localization. Lipiodol is very slowly absorbed. It has been observed in the lumbar sac as long as two years after its administration. A patient who is

aware of the presence of this foreign substance may develop all sorts of bizarre symptoms. Again, it must be recorded that lipiodol causes both a local and a general systemic reaction after injection. The local reaction consists in the development of a transient aseptic meningitis, as evidenced by increased cell count and increased globulin in the spinal fluid and increased frequency of bloody taps. These changes are usually not in evidence after three days, although a quantitative protein increase may be demonstrated for ten days. The systemic effects are mild. There may be temperature elevation, nausea, vomiting, pains in the legs, and general aching. These symptoms subside within three days. Most neurologists prefer not to use lipiodol if localization is possible without it.

To obviate some of the disadvantages of lipiodol, Frazier has recently advocated the use of campiodol, which is an iodized rape-seed oil. Its advantages over lipiodol are its low viscosity, so that it does not produce false impressions as to localization of the tumor, and its non-toxic and non-irritating character, being somewhat better tolerated than lipiodol; also, its slower deterioration. Campiodol is used by cisternal or lumbar puncture in the same way as lipiodol.

The other mechanical aid to the localization of cord compression by x-ray is the subarachnoid injection of air. Dandy originated this system of air myelography. Röntgenograms or the fluoroscope will reveal the arrest of the air at the lower level of the cord tumor when the air has been injected by lumbar puncture.

Furthermore, in those obscure cases pointing to a focal spinal cord lesion, the exact nature and localization of which is in doubt after the usual tests, there remains a means of last resort. In these cases, crippled or threatened with permanent disability, the exploratory laminectomy is justifiable.

Laboratory aids in the diagnosis of spinal cord tumor are not numerous. The most important work in this field lies in the spinal fluid examination. The color, cell count, globulin, quantitative protein, Nonné's test, the complement fixation, and Lange's colloidal gold should be obtained in every case of suspected tumor. The color of the spinal fluid in spinal cord tumors, especially of the extramedullary intradural types, is often yellow. This xanthochromia never exists without an increased globulin content in the spinal fluid, and often there is a concomitant increase in cell count. These three features constitute the so-called xanthochromic syndrome of Froin. A xanthochromic spinal fluid does not mean a cord tumor in every instance by any means. Any lesion of the cord giving rise to hemorrhage may cause a yellow spinal fluid. The globulin as determined by the Pandy or Ross-Jones methods and the albumin as determined by the Nonné test are generally increased in spinal cord tumors. The total quantitative protein in milligrams per cubic centimeter is most important. Elsberg states that he has never seen a case of spinal cord tumor in which the protein content was less than forty milligrams per cubic centimeter. The Lange gold test and the spinal fluid Wasserman usually eliminate the central nervous manifestations of syphilis in obscure cases.

The x-ray is of little importance in the diagnosis of spinal cord tumors, aside from its use in connection with lipiodol or campiodol. Occasionally, in extramedullary tumors, an exostosis will be seen just below or at the level of the tumor. This exostosis is due to chronic inflammation and venous stasis and is seen only in long-standing cases. Again, regional scoliosis at the site of a tumor has been remarked. Finally, in the paravertebral tumors such as osteosarcoma, osteoma, or chondroma, the diagnosis may stand revealed.

For purposes of differential diagnosis, the complete urinalysis should be run. The Bence-Jones bodies should be searched for, so as to eliminate multiple myeloma of the cord.

Complete blood count, chemistry, and blood serological studies should be done. These will show the absence or presence or coexistence of systemic diseases with cord manifestations such as syphilis and pernicious anemia, and infectious diseases of the cord.

The differential diagnosis of spinal cord tumors must be approached from two viewpoints:

1. In the event that the spinal cord compression is caused by tumor, an attempt should be made to distinguish the variety of tumor, whether intramedullary, intradural extramedullary, or extradural.

2. In the second place, that array of diseases whose manifestations very closely mimic those of cord tumor must be eliminated.

While it is highly desirable, it is not always possible to distinguish the type of cord tumor prior to operation. It has been said of the extradural paravertebral tumors that their period of evolution is shorter than that of the intradural varieties, and that they may cause spinal cord compression sooner. Röntgenograms of the spine may reveal the presence of chondroma, osteosarcoma, or osteoma having originated from the vertebræ. It is not, however, a

matter of great moment to distinguish the extradural paravertebral tumors. It is of considerably more practical import to differentiate the intramedullary and the intradural extramedullary types, wherever possible. The former, constituting a small group of fifteen per cent of cord tumors, are generally malignant and incapable of operative extirpation; the latter, comprising seventy per cent of cord tumors, are generally benign and encapsulated and may be capable of removal.

The following observations may be of some assistance in postulating the presence of the intramedullary variety of cord tumor:

1. In intramedullary cord tumors, the sensory disturbances in any modality are best defined at the level of the lesion and the sensory changes tend to progress distally. In sharp contrast, the distal segments are always more completely compromised in extramedullary tumors and the sensory changes are much less defined at the actual site of the lesion. The sensory changes tend to progress proximally as the degree of cord compression increases.

2. Furthermore, the sensory disturbances more frequently conform to a syringomyelic sensory dissociation syndrome in intramedullary than in extramedullary tumors.

3. Again, it is generally held that touch is more often absent in intramedullary than in extramedullary tumors.

4. Sensation in the perianal region is said to be less commonly preserved in the intramedullary than in extramedullary tumors.

5. Sphincteric disturbances and impotence occur earlier in the intramedullary tumor cases, but are less severe than in the extramedullary cases. A hesitancy or urgency in the intramedullary case may correspond to an absolute incontinence in the extramedullary type.

6. That indication of anterior cornual cell irritation or degeneration, fibrillary twitching, is more commonly seen in intramedullary cord tumors.

7. Pain is usually admitted to be a more frequent symptom in extramedullary tumors.

8. The Brown-Séquard syndrome is rarely present in intramedullary tumors; it is a frequent phenomenon in the extradural tumors.

9. The xanthochromic syndrome of Froin is more frequently noted in extramedullary than in intramedullary tumors.

10. The Queckenstedt is more often positive in extramedullary than in intramedullary tumors.

The elimination of those diseases which present similar findings is the final phase in the establishment of a diagnosis of cord tumor. There are many different types of cord lesions which may produce similar peripheral manifestations. The diseases which have been confused with cord tumors most frequently are:

1. Multiple sclerosis.
2. Transverse myelitis.
3. Syringomelia.
4. Meningo-vascular syphilis.
5. Adhesive arachnoiditis.
6. Amyotrophic lateral sclerosis.

In addition, such dissimilar affections as Hodgkin's disease, multiple myeloma, aneurysm of the aorta, pachymeningitis hypertrophica cervicalis, Potts' disease of the spine, and cervical ribs may often imitate the spinal cord tumor syndrome.

McKendree reports three cases of multiple sclerosis subjected to laminectomy for suspected cord tumor. Multiple sclerosis, in contrast to cord tumor, presents evidence of a multiplicity of lesions, scanning speech, an intention tremor, and nystagmus. Early cases of multiple sclerosis do not often reveal this illuminating triad of symptoms. In that case, the Queckenstedt becomes the diagnostic criterion. Multiple sclerosis does not cause subarachnoid blocking, whereas the Queckenstedt is 80% positive in cord tumors. Pain is rare in multiple sclerosis; in cord tumors, pain is frequently the earliest and most convincing symptom. The spinal fluid in multiple sclerosis shows a normal protein value. It is increased to above forty milligrams per cubic centimeter in cord tumors. The history in multiple sclerosis is a long one, marked by remissions. Spinal cord tumors show a definite chronologic progression.

Transverse myelitis is a second condition which often leads to a mistaken diagnosis. The rather abrupt onset with febrile disturbances and absence of the Queckenstedt subarachnoid blocking should aid materially in attaining the correct diagnosis. Pain is seldom the prominent symptom in myelitis that it is in cord tumor.

Syringomyelia has two prominent symptoms: atrophy, and the peculiar syringomyelic sensory dissociation; that is, the loss of pain and temperature sensations but the preservation of touch.

Atrophy is less commonly encountered in cord tumor, and does not constitute an important sign until late. The syringomyelic type of disturbance is not frequently seen in cord tumor. The intramedullary tumor occasionally manifests this phenomenon.

However, the sensory disturbances are often patchy, scattered, multiple, and indefinite in syringomyelia; in cord tumor, a definite sensory level is the rule. Cranial nerve involvement is not infrequent in syringomyelia; the cord tumor rarely shows any cranial nerve disturbances. Sphincteric disturbances are more common in cord tumors. The demonstration of subarachnoid block, of xanthochromia, and increased protein content of the spinal fluid postulate the presence of tumor.

As for meningo-vascular syphilis of the cord, this possibility can usually be ruled out by serological studies of the spinal fluid. In those cases where syphilis is attenuated and the spinal fluid shows a negative Wasserman, a resort to a therapeutic test may be necessary. Improvement under therapy affords *prima facie* evidence of the luetic factor. It must be stated, however, that the presence of a positive Wasserman in the spinal fluid does not preclude the coexistence of a cord tumor. Such an instance was recently reported by Simon Rothenberg.

Quite frequently, at operation, an adhesive arachnoiditis, instead of a cord tumor, has been discovered. In these instances the Queckenstedt offers no assistance. The myelographic methods in vogue prove useless. A careful history is perhaps the most valuable differential aid. The history of encephalomyelitis, tuberculosis, syphilis, or an antecedent acute meningitis, bespeaks adhesive arachnoiditis. Sensory and motor changes are generally not so marked as in tumor. The exploratory laminectomy represents the last resort to diagnosis in many of the cases.

In amyotrophic lateral sclerosis, there is a frequent invasion of those cranial nerves which possess a motor nucleus, whereas, on the contrary, it is the rarest coincidence to have cranial nerve involvement in cord tumor. Amyotrophic lateral sclerosis almost never presents any disruption of the modalities of sensation. It is indeed rare and atypical for the cord tumor not to show sensory aberrations. Atrophy is a more pronounced symptom and fibrillation a more common occurrence in amyotrophic lateral sclerosis than in cord tumor. The Queckenstedt and myelographic procedures definitely differentiate the two conditions.

Hodgkin's disease occasionally involves the cord. Removal and section of one of the enlarged glands present elsewhere will reveal upon microscopic study the pathognomonic Dorothy Reed giant cells of Hodgkin's disease. The prompt subsidence of the cord symptoms after x-ray therapy predicates the presence of Hodgkin's of the cord. Rothenberg has recently reported a case of this kind.

We feel that this paper would be incomplete if some mention were not made of tumors of the cauda equina. These tumors are generally neurofibromata. From the standpoint of diagnosis, these tumors are of especial interest to the urologist, orthopedist, and general practitioner, as well as to the neurological surgeon. These are the tumors whose root pain manifestations have often paraded under such diagnoses as renal colic, sciatica, neuritis, lumbago, myositis, arthritis, sacro-iliac strain. Cauda equina tumors are characterized by a rather definite syndrome:

1. Severe root pains, radiating to various segments. As in cord tumors, coughing, straining at stool, blowing the nose, stooping, or the lifting of heavy weights, tend to exacerbate these pains. Pain is commonly situated in the lumbosacral area of the back, and the sciatic nerve is a favorite path for the transmission of the peripheral manifestations of pain. The upright position is preferred, as the pain is increased in the recumbent state. Some patients give a history of having slept in chairs for months.

2. Signs of lower motor neurone involvement. Herein lies a great difference and distinction from cord tumors. The signs of lower motor neurone involvement in cauda equina tumors are: Absent deep tendon reflexes, a flaccid type of paralysis, muscular atrophy, fibrillation of muscle bundles, and the reaction of degeneration.

As a rule, all modalities of sensation are disturbed, but, as in the cord, tumors of the cauda equina may occur without sensory changes. It is a point worthy of note that it is unusual to find equal bilateral sensory involvement in cauda equina tumors. Sensation is most greatly compromised upon the side that was the original site of the tumor. A saddle-shaped area of anesthesia about the perineum is quite characteristic of cauda equina tumors. Sphincteric disturbances occur quite early in these cases.

The spinal fluid, in the case of cauda equina tumor, may give a positive Nonné reaction. It may also show increased cell count and a yellow color. The demonstration of subarachnoid block by means of the Queckenstedt test is frequently unsuccessful. It has been said that in these cases lipiodol has its greatest usefulness. The diagnosis may be rendered obvious by the use of this opaque contrast medium.

SUMMARY

1. In a given case suspected of having a spinal cord tumor, it is most essential to take a careful

history. Chronology of events and the steady progression of symptoms may give the best clue to the diagnosis. It has been indicated that many show root pains and paresthesiæ, then motor weakness and sensory aberrations, possibly a Brown-Séquard syndrome, and eventually a sensory and motor paralysis, even involving of the sphincters.

2. Methods for determining the level of cord compression include the following:

(*a*) The neurologic examination still remains the most valuable method. The upper limit of sensory changes should be determined. Such focal motor manifestations as myoclonus and fibrillation have a distinct localizing value. The importance of examination of reflexes is obvious. Temple Fay's method of localization by observation of vasomotor and pilomotor phenomena may be of considerable value.

(*b*) Lumbar puncture and manometric studies of the cerebrospinal fluid pressure should form an intrinsic part of each neurologic examination.

(*c*) Ayer's combined cisternal puncture appears to be indicated as a measure of differentiation only when the history is indefinite, the neurologic examination unsatisfactory, and the Queckenstedt merely suggestive.

(*d*) The use of relay lumbar puncture in diagnosis is disparaged.

(*e*) The mechanical methods which aid in myelographic localization, Dandy's air method, and the use of lipiodol and campiodol, are discussed.

(*f*) The ultimate resort for diagnosis, in doubtful cases, crippled or threatened with permanent disability, should be exploratory laminectomy.

3. The laboratory aids to diagnosis in cases of spinal cord tumor are few. These consist of examination of the spinal fluid and urine, röntgenograms of the spine, and certain studies in blood chemistry, serology, and microscopy.

4. Two aspects of differential diagnosis are reviewed:

(*a*) The differentiation between the three varieties of spinal cord tumors may be impossible prior to operation.

(*b*) The differential diagnosis of spinal cord tumors requires the elimination of the following:

(1) Multiple sclerosis.
(2) Transverse myelitis.
(3) Syringomyelia.
(4) Meningo-vascular syphilis of the cord.
(5) Adhesive arachnoiditis.
(6) Amyotrophic lateral sclerosis.
(7) Hodgkin's disease of the cord.
(8) Multiple myeloma.
(9) Aneurysm of the aorta.
(10) Pachymeningitis hypertrophica cervicalis.
(11) Cervical rib.
(12) Potts' disease.
(13) Hypertrophic arthritis and spondylitis.
(14) Vertebral lues.

5. Cauda equina tumors present quite a different clinical picture from that of tumors situated higher in the cord.

BIBLIOGRAPHY

1. Four cases illustrating symptoms, diagnosis and treatment of spinal cord compression:
Dermoid cyst of cauda equina.
Intramedullary tumor of cervical spinal cord.
Post-traumatic arachnoiditis.
Encysted arachnoiditis.
T. A. Shallow, *Surgical Clinics of North America*, 8: 885-899, August, 1928.

2. Case of adhesive spinal arachnoiditis simulating spinal cord tumor. W. W. Young, *Journal of Nervous and Mental Diseases*, 68: 11-16, July, 1928.

3. Clinical and pathological study of two teratomatous cysts, containing mucus and ciliated cells. L. S. Kubie and G. F. Fulton. *Surg., Gynec. and Obst.*, 47: 297-311, September, 1928.

4. Herpes Zoster as early symptom. G. R. Kamman, *J. A. M. A.*, 91: 320-321, August 4, 1928.

5. Tumors of the spinal cord in childhood. B. Stookey, *Am. J. Dis. Child.*, 36: 1184-1203, December, 1928.

6. Intramedullary Lipoma: Complete operative removal. E. Sach and F. F. Fineberger, *Arch. Surg.*, 17: 829-833, November, 1928.

7. Three cases of spinal cord tumor. G. W. Swift, *S. Clinics N. A.*, 8: 1525-1535, December, 1928.

8. Compression of spinal cord due to ventral extradural cervical chondromas: Diagnosis and surgical treatment. B. Stookey, *Arch. Neurol. and Psych.*, 20: 275-291, August, 1921.

9. Myeloma. D. G. Durman, *Ann. Surg.*, 88: 975-984.

10. Iodized rape-seed oil (Campiodol) for cerebrospinal visualization. C. H. Frazier and M. A. Glaser, *J. A. M. A.*, 91: 1609-1614, November 24, 1928.

11. Vasomotor and pilomotor manifestations: Their localizing value in tumors and lesions of spinal cord: 13 verified cases. T. Fay, *Arch. Neurol. and Psychiat.*, 19: 31-46, January, 1928.

12. High cervical cord lesions in guise of combined system disease. W. D. Friedman, *M. J. and Record*, 126: 734-738, December 21, 1927.

13. Spinal cord tumors. J. J. Shugrue, *Va. Med. Monthly*, 54: 305-306, August, 1927.

14. Intradural spinal lipoma; report of case and symptoms for ten years in child aged eleven; review of literature. B. Stookey, *Arch Neurol. and Psychiat.*, 18: 16-46, July, 1927.

15. Tumors of cauda equina and spinal cord; four cases in which marked spasm of erector spinæ and hamstring muscles was outstanding sign. G. E. Bennett, *J. A. M. A.*, 89: 1480-1483, October, 1928.

16. Lipiodol injection for localization of spinal cord tumors and other lesions. I. Strauss, *M. Clin. N. America*, 10: 1079-1082, January, 1927.

17. Adhesive spinal arachnoiditis simulating spinal cord tumor. B. Stookey, *Archives Neurol. and Psychiat.*, 17: 151-178, February, 1927.

18. Definite level symptoms suggesting spinal tumor study of thirty-three cases subjected to laminectomy. Sachs and M. A. Glaser, *J. A. M. A.*, 88: 308-310, January, 1928.

19. Sarcoma of vertebræ with paraplegia improved by deep x-ray therapy; case. I. Strauss, *M. Clin. N. Amer.*, 10: 1077-1078, January, 1927.

20. Diagnosis of disease of cauda equina by injection of iodized oil. G. S. Smitt, *Nedrl. Tijdeschr. v. Geneesk*, 2: 2199-2208, November 1, 1924 (illus.). Ab. *J. A. M. A.*, 84: 241, January, 1925.

21. Spinal subarachnoidal blockage. Ab. *J. A. M. A.*, 84: 1969, June 20, 1925.

22. Use of lipiodal in localization of spinal lesions: Preliminary study. F. G. Ebaugh, *Am. J. M. Sc.*, 169: 865-869, June, 1925.

23. Use of lipiodol in tumor of spinal cord. W. J. Mixter. *Arch. Neurol. and Psychiat.*, 14: 35-45, July, 1925.

24. Compression of spinal cord by tumor. W. G. Mixter, *Ann. Surg.*, 82: 865-870, December, 1925.

25. Four extramedullary tumors of spinal cord with removal. B. Stookey, *S. Clinics N. America*, 5: 473-489, April, 1925.

26. Manometric study of cerebrospinal fluid in suspected spinal cord tumors. B. Stookey, H. R. Merwarth, and A. M. Franting, *Surg., Gynec. and Obst.*, 41: 429-442, October, 1925.

27. Sicard's myelography and its results. W. Denk, Ab. *J. A. M. A.*, 87: 208, July 17, 1926.

28. Use of lipiodol in localization of spinal lesions, local and systemic effects of injection of lipiodol into subarachnoid space. H. Mella, *Am. J. M. Sc.*, 172: 117-123, July, 1926.

29. Dangers to be avoided in radiotherapy of tumors of cranial cavity and spinal cord. Ab. *J. A. M. A.*, 87: 2134, December 18, 1926.

30. Relay puncture of spinal canal: Means of aiding segment diagnosis of spinal cord tumor. H. Saethra, Ab. *J. A. M. A.*, 87: 1252, October 9, 1926.

31. Tumors of cauda equina. L. Davis, *S. Clinics of N. A.*, 6: 1081-1091, August, 1926.

32. Cancer and spinal cord. A. Neil and W. N. Krauss, *Am. J. Med. Sc.*, 171: 825-836, June, 1926.

33. Four unusual cases of spinal cord compression. S. Rothenberg, *J. Neuro. and Ment. Dis.*, 63: 143-148, February, 1926.

34. Rontgenotherapy of tumors of spinal cord. H. Schaeffer, Ab. *J. A. M. A.*, 86: 555, April, 1926.

35. Spinal cord tumor occurring without pain or sensory change with report of case. R. L. Glass, *Am. J. M. Sc.*, 171: 552-555, April, 1926.

36. Blummer's bedside diagnosis. Vol. III, *Compression of the Spinal Cord*, Charles A. McKendree, pp. 644-657.

37. Localization of spinal block by means of iodized oil. E. C. Russell, *J. A. M. A.*, 82: 1775, 1924.

38. The use of lipiodol in the localization of spinal lesions. F. G. Ebaugh, *Am. J. Med. Sc.*, 169: 865, 1925.

39. Extramedullary tumors of the spinal cord. G. Stookey, *Surg. Clin. N. Amer.*, 5: 473, 1925.

40. The atypical spinal tumor. N. Sharpe, *Am. J. Med. Sc.*, 167: 542, 1924.

41. The so-called hour-glass tumors of the spine. George F. Hener, *Arch. of Surg.*, Vol. 18, April, 1929.

BLOOD STREAM INFECTIONS *

By SYDNEY R. MILLER, M.D.
Baltimore, Md.

The title of this paper will probably suggest to your mind the relatively common clinical condition, synonymously spoken of as sepsis, septicemia, blood poisoning, systemic or septic infection. The title, admittedly a misnomer at the start, was deliberately chosen with the idea in mind of attempting to draw attention to the erroneous way with which we are perhaps inclined both to think as well as deal with an admittedly serious and complex problem.

A brief discussion of certain well-established immunological and clinical facts concerning blood-stream infections would seem to be rather timely, not because there is anything particularly new to be said but, rather, because we are in one of those phases, therapeutically speaking, which is perhaps not without both its advantages and dangers. Because of the phase, it is probably true that, with characteristic medical credulity, we have lost sight of some well-founded theories and principles concerning the nature of the clinical problem referred to here.

Two fairly common situations may serve to bring out two sides of the problem, which may then be approached more easily and thoughtfully:

1. A young, apparently healthy, vigorous individual rather rapidly succumbs to so-called blood poisoning, following a very insignificant injury or trauma. Although we may theorize all we like as to the precise cause of a premature death, no one can offer an absolute, exact, or satisfying explanation of it. Opinions will vary—some will say he died from toxemia; others, from the effect of toxins upon the brain centers; but most probably the answer, "His powers of resistance were lowered," will be the one most frequently given; but as to how or why this came about nothing can be said.

2. Another desperately ill patient, admittedly septic and critically ill, suddenly takes a turn for the better and recovers. How common it is, under such circumstances as these, particularly when the change has *seemed* to follow some particular therapeutic measure employed as a last resort, for imagination and enthusiasm to run away with reason! The story spreads—a case of blood poisoning has been cured by such and such a procedure; 'tis broadcast by laymen and physicians alike, too often in articles which may and actually do lead to harmful generalizations.

It is with the idea of trying to stabilize opinion as to situations such as have just been described that this particular attempt is made to review certain of the old and newer facts, so far as they concern two pressing questions: First, is the blood stream ever actually infected in the same sense that cellular tissues are? Second, can substances of any sort, by their injection into the blood stream, destroy the infecting agents without simultaneous harm to the body cells elsewhere? Sane thinking with reference to the answers to these two questions is particularly and increasingly important, in view of the recent accumulation in the literature, and in the minds of many, of assumptions which would seem to give an affirmative answer to both of these queries.

The Clinical Picture of Septicemia.—It is not the intention at this time to go into the well-known and recognized clinical features of blood-stream infections, or, perhaps better, bacteremia. It is important, however, clinically to separate these conditions into three main groups—namely, acute, chronic, and terminating—each one of which is invariably asso-

* Read before the Section on Internal Medicine of the West Virginia State Medical Association at Martinsburg on May 22, 1929.

ciated with some focus of infection which may be either obscure or obvious. It should further be remembered that the clinical picture is one of extreme variability, and this is particularly true and important in the chronic group, where an inconspicuous or apparently absent fever, low leucocyte count, and absence of many of the ordinary metastatic phenomena may readily be missed by failure to apply proper and frequently repeated laboratory investigations of diagnostic aid, particularly blood cultures. These may need to be taken frequently, but they are too often reported as negative, possibly because of insufficient care in the selection of the type of media employed, the use of an insufficient amount of blood, or through failure to hold the cultures under proper conditions for a sufficient length of time.

What actually is meant, or should be the accepted view, with reference to the meaning of blood-stream infections or septicemias?

That there is a widespread, probably thoughtless, misconception about it is apparent; and, for the further basis of discussion, the term as properly defined should mean nothing more than the presence of demonstrably living pathogenic organisms in the circulating blood. Used in this sense, the words *septicemia* and *bacteremia* are synonymous, and the latter term is considered preferable.

It is highly important that certain concepts and facts concerning the existence of living pathogenic organisms in the blood be properly borne in mind, and, without particular attempt to enlarge upon them, they will be stated in rather a definite way, as follows:

1. The clinical picture accompanied by a bacteremia is, as has already been stated, an extremely variable one.

2. It is a fact, long established and probably witnessed in the experience of most of us, that spontaneous cures are by no means uncommon, even, indeed, in individuals who have had little opportunity, for one reason or another, to secure what might be called the best that modern therapeutics can afford.

3. The fact should be remembered that the mere entrance of living bacteria into the blood stream is not only common but, indeed, is by no means necessarily serious. Common examples to bear out this point are frequently observed in the course of typhoid fever, pneumonia, and other infections.

4. Available data would seem to warrant the assertion that non-debilitated septic patients more often recover from a demonstrable blood-stream infection than do not, particularly, of course, if the initial focus of infection is found, drained, or eradicated.

5. As a corollary to this, one must not forget that patients equally often recover, even when the focus is obscure to the point of not being found, particularly if they survive the effects of the first four or five days of their general infection. The commonest clinical example of this sort is to be seen in the bacteremias following pregnancy.

6. When bacteremia occurs, as it frequently does, as a terminal event in a long-standing case, survival is not to be expected, regardless of what therapeutic measures may be employed.

7. Finally, there is undoubtedly a group of clinically proven instances of low-grade sepsis which may go on for long periods of time without apparent progress or retrogression, probably explained on the assumption that the balance of power is never anything but equally divided between the host and the parasitic invader, and, until one or the other gains the ascendancy, they remain deadlocked.

Granted that the above assertions are essentially true, one is justified then in stressing the conception of bacteremia blood-stream invasion, *not* as a state in which bacteria are going 'round and 'round in the blood, multiplying as they go, but rather does it represent simply a transitional stage of a local infection to a general one, and the process involved may perhaps with help be regarded or visualized as a contest. Clinically, one witnesses every phase of this contest between cells and the invading organisms, with victory now pointing one way and now another. As one author rather recently pictures it, the battle is somewhat analogous to what we witnessed in trench warfare. A bacterial raid is made, somewhat of a surprise attack, and a trench may be taken because the enemy has been taken unaware; once aware to the danger, however, further raids are made under a somewhat destructive fire, and the invading hosts are either killed or made prisoners as soon as they go over the top; but when, either because of the suddenness of the attack or their frequent occurrence the invaders are not halted, trench after trench is taken, focus after focus is established, thereby establishing lines of communication for reinforcements which constantly come on, and this battle is lost. Clinically, therefore, and because of the concepts earlier stated, the contest is uncertain as to its outcome at any given moment; and it is particularly for this reason that the mere finding of

a positive blood culture gives such a small view into the complex phenomena taking place within the body. Viewed in this way, the number of bacteria found in the circulating blood at any given time may be either indicative of the myriads of reinforcements from secondary foci established, or only of equal myriads on their way to destruction. The laboratory demonstration of a blood-stream infection is not the serious thing at all, but rather the significance that a local infection is becoming general; and there is dire need for the quick solution, if possible, of the question "From whence and whither?"

It is, of course, bromidic to state that the problem, clinically, is further complicated somewhat by the type of local focus and the organism found in the blood stream.

The Immunity Mechanism Under Fire.—The precise mechanism and action of immunity, as we call it, is as yet not settled; nor do we know exactly under what conditions, where, and why do so-called antibody or protective substances form. Many theories have been advanced to the effect that this function is inherent in the leucocytes of the blood, in the lymph nodes, or in various other tissues of the body. Gradually it became more and more apparent that many of the phenomena of both general and local immunity could be better explained by assuming that there is some widely distributed cell type essentially active in the process of immunity and antibody production. This assumption has apparently been best met in the form of the so-called reticulo-endothelial system of Aschoff. In a histological sense this type of cell is widely distributed throughout the body and includes, particularly, endothelial cells in the capillary and lymph spaces, where, incidentally, circulation is slow. The system in question is related to the monocytes of the blood, and included in it are cells known to be most phagocytic and resistant in their capacities and tendencies. The liver, spleen, lymph nodes and portions of the bone marrow, long known as important in the disposal of foreign cells and in antibody production, are extremely rich in reticulo-endothelial elements. Countless experiments are on record, showing that inert substances, such as trypanblue or India ink, when injected into the circulation, rather promptly disappear and are taken up in the cells of the reticulo-endothelial system, especially in the Kupffer cells of the liver, the pulp cells of the spleen, and the capillaries of the bone marrow. Over a period of many years experiments would seem to prove that the same fate happens when living bacteria, even pathogenic ones, are injected into the circulation. Furthermore, much work in recent years has seemed to substantiate the view that this particular system is perhaps the most, if not the only one, active in the immunity reactions associated with protective antibody production. Experiments in which this system has been saturated with inert substances have revealed the fact that animals so treated show a marked reduction in their capacity to form specific hemolysins, precipitins, agglutinins, and allied immune substances. Assuming, for the purpose of argument, that the reticulo-endothelial system represents the primary defensive mechanism against bacterial invasion, it becomes relatively easy to understand and again visualize some of the clinical concepts which have been referred to above. From a given focus a large number of organisms are thrown into the free circulating blood stream; to their presence the widely distributed cells of the reticulo-endothelial system immediately react as they do to foreign substances, and probably both through the functions of phagocytosis as well as the production of bactericidal substances, invading organisms are quickly disposed of, blood cultures become sterile, and the patient recovers. If, however, the invasion is sudden or massive, or frequent, one can conceive of the defense so completely saturated that its capacity is paralyzed, so to speak, and the host succumbs rapidly. On the other hand, perhaps small predatory bands or regiments of bacteria keep constantly assailing the defense machine and some get by. These, for the moment victorious, settle down somewhere, gain a foothold where they at once entrench themselves in the form of secondary foci, from which now further excursions of the invading army can take place. Thus the battle multiplies and the balance of power would seem to depend entirely upon whether the single line of defense can be kept from going into a state of exhaustion or not, before the outcome can in any way be certain. It would seem apparent, if such a visualization as this is correct, that actual blood-stream infection, as such, does not ever exist—but rather that positive blood cultures signify the establishment and dangerous activity of foci secondary to the initial one, wherever that may have been.

The treatment of conditions clinically, accompanied by demonstrable bacteremia, may be quickly outlined as follows:

1. The localization of the primary focus and its prompt eradication or drainage.

2. General supportive measures included in which may be mentioned free use of fluids, the sufficient

daily intake of a supportive, high-caloric diet, rest in the broadest sense of the word, and drugs, which are usually of minor consequence.

3. Special measures, such as the use of vaccines, specific or non-specific sera, transfusions, etc.

4. Intravenous medication—and it is to this phase of treatment that discussion at this time will be limited.

Historically, one may trace this form of treatment as far back as 1656, and over the next 250 years one finds the names of men famous in medical history advocating the use of one drug or another, gum into the blood, for the cure of such conditions as rabies, cholera, tetanus, malaria, and other diseases not, of course, understood at all in a precise, bacteriological sense. Between 1907 and 1913 came the famous researches of Ehrlich, who postulated as the result of his work a specific affinity between drug and parasite and hence the arrival of the long-sought-for "therapia sterilisans magna." His ideas and ideals have strongly modified and directed subsequent chemotherapeutic research. In 1912 Churchman published his earliest articles dealing with the selective action of gentian violet, particularly upon the gram-plus group of organisms. Finally, just ten years ago, Young and his co-workers announced mercurochrome, since when no end of discussion and dissension have arisen as to its therapeutic value, especially in cases of bacteremia.

Time will not permit any discussion or analysis of the present status of any specific form of intravenous therapy in cases of the type we are now considering. But from the chaos of discordant opinions certain deductions, it would seem, can be drawn and with no degree of uncertainty. Briefly stated, the following facts seem apparent:

1. There exists as yet no clear definition as to the indications and contraindications for their use in cases associated with bacteremia.

2. The accumulated facts upon which we can base sound judgment as to their value have not, as yet, been carefully vertified by either clinical or experimental work.

3. Their use is by no means devoid of dangers, some clearly recognized and others but vaguely understood. That they actually may work adversely against the integrity of the reticulo-endothelial lines of defense seems more than a mere premise.

4. The dramatic reports of cures in hererologous clinical conditions are by no means convincing testimony of the specific curative action of these agents.

5. Far too many cures are ascribed to intravenous dye medication, based on the idea that their action in the body is the same as that observed in the laboratory—even in the face of admitted uncertainty as to the dye concentration in the body as well as the accepted fact that the maximal concentration permissible without danger to the host possesses no, or at most a feeble, transient bactericidal action.

6. The preserved monotrophic and selective action of these dyes upon bacteria, and their simultaneous negative cellular trophic action, is not substantiated by the evidence thus far produced.

7. Indeed, their action, apparently beneficial in some cases, is as yet most uncertain and certainly *not* bactericidal. "In the action of almost every remedy which has proved of value in the specific cure of infection, there are features which can not be interpreted by a sheet application of Ehrlich's distribution hypothesis; the discrepancies begin to show a new congruity among themselves. The conception of a remedy, not killing the parasites immediately but modifying their virulence or lowering their resistance to the body's natural defenses; of a remedy not acting as such, but by virtue of the formation from it of some directly toxic product, either by a modification of its structure or by its union with some tissue constituent; of an affinity of the remedy for certain cells of the hosts' body leading to the formation of a depot from which, in long, persistent, never dangerous concentration the curative substance is slowly released; all these conceptions, and others, present themselves again and again as necessary for the rationalization of effects observed."

SUMMARY AND CONCLUSION

Enough has been said to show that the clinical conditions accompanied by a bacteremia represent a very complex problem and much remains to be done to clarify the processes which govern its occurrence, its fatal progression or safe termination. It seems apparent that the mere presence of living organisms in the circulating blood is but one phase of the problem, and, in any event, the conception of blood-stream infection in a purely cellular sense is both erroneous and misleading. Equally misleading is the prevalent idea of sterilization of the blood by the use of various forms of intravenous dye therapy.

For these reasons it may safely be said that extreme caution is indicated in the clinical use of all new therapeutic agents whose mode of action and fate in the body are incompletely known. Obviously, those who employ dyes in bacteremic conditions must avoid toxic doses, and never to the neglect of the appropriate surgical care of foci of infection

related directly or otherwise to the septic condition. Convincing evidence of the beneficial effects of therapeutic procedures in infectious diseases or conditions of bacteremia requires careful comparison with a control series of similar cases untreated by the procedure in question. Failure to make such control observations detracts from the evidence in favor of the intravenous use of dyes in many of the conditions in which they have been employed. Though these newer chemotherapeutic measures do possess unquestioned merit and are prophetic of still further advances, it seems none the less wise to urge conservation both in their use and in the deductions as to their clinical therapeutic value until much more is known.

Discussion

DR. C. W. WADDELL (Fairmont): I am very glad to have heard Dr. Miller present the other side of this very interesting question. I think sometimes it is extremely hard to be conservative and not indulge in the spectacular. It is very easy to use one of these pretty medicines. It makes an appeal to the family. As Dr. Miller pointed out, a great many get well and a great many don't, whether we do it or do not. In our particular community I believe that this form of treatment is beginning to lose a little caste.

DR. W. M. SHEPPE (Wheeling): I would just like to emphasize one point that Dr. Miller made, namely, in regard to the use of blood transfusion in the treatment of sepsis, and I think that is particularly true in the treatment of puerperal septicemia. The past winter we have seen an unusual number of these cases coming in from various points and I have been tremendously impressed with the value of blood transfusion in such instances. Many of these people have a secondary anemia, particularly if their infection is due to a hemolytic organism. The transfusion corrects the anemia and in some unknown way affects the colloidal chemistry of the blood and tissues in such a manner as to stimulate the formation of antibodies—at least that is what seems to happen. Without any very definite figures, the mortality of puerperal septicemia must have been tremendously influenced by the use of frequent and relatively small blood transfusions.

DR. W. E. VEST (Huntington): I certainly appreciate the careful presentation of the subject Dr. Miller has made. It is conservative, neat, and concise, and I can not help but feel that two of the points he made are well worth our remembering: The first Dr. Sheppe called attention to—the fact that blood transfusion is of marked importance. I think I have observed a number of those cases and have seen the small, repeated blood transfusion used to good advantage.

The other point which he made was very obvious and has been commented on by the preceding discussants: that is, that we ought not to be in too big a hurry to inject some kind of a colored solution into the blood stream. The blood stream is like any other tissue of the body—it is susceptible to all kinds of insults, and it seems to me it has been insulted very often in the last few years. I am very glad Dr. Miller sounded the note of warning he has.

DR. H. A. WALKUP (Mount Hope): This paper gets close to the general practitioners. We have tried everything. When some of the older practitioners located these blood-stream infections they were using mercury inunctions with success. Later, they came to use mercurochrome solution with success, and at a later time with not so much success. I wish to comment on my personal cases of blood-stream infection, being located in a small community for a period of time and having been able to follow them.

It has been my finding that a great percentage of these infections are in syphilitic conditions. I have in mind two cases of young persons treated for this condition. They passed out of my jurisdiction and later developed blood-stream infection from very slight wounds, and under blood transfusion treatment both died last year in most able hospitals.

It seems to me that we should consider this point more. We would probably be better able to get in touch with these conditions if we did. I think that the old practitioner would use a mercury inunction, and I think Dr. Young over in Baltimore would recommend mercurochrome. I think that the blood transfusion, or any recommendation a general practitioner would offer, would be good so far as it went. If we get on the proper background, maybe we can come to a happy solution and cure some of these patients.

DR. O. B. BIERN (Huntington): The only regret I have about Dr. Miller's paper is that more members didn't hear it. I think all of our surgical colleagues ought to be here, because they get these patients first and then turn to us with a sort of long look on their faces and want us to do something. I think they are the ones who start us doing this fluid business and many other things that we in our own minds don't think so good. I know in the short time I have practiced medicine, I don't believe there

is anything under the sun I haven't injected into the blood to try to help these people, except yeast. I don't believe I have used any yeast.

Dr. Miller made one point that I don't believe any of the discussors have brought out, and I just want to emphasize it, if I am right in assuming that he implied this. A lot of times in the treatment of syphilis, when we treat it too actively at the beginning, or at the onset of the disease, we don't give the body a chance to work up its own defense mechanism. I believe he implied in his paper that we go ahead and do a lot of things that will not raise the resisting powers of the body, but we lower the natural defense mechanism. I believe that is a thing we should certainly bear in mind, with the other things that he did mention; rest, good food, and keeping up the body balance. I believe those things will increase the patient's body resistance much more than any other thing that we can do for him.

I was just thinking of the last thing that I tried to use in blood-stream infection—so-called immunological transfusion, recovering the bacteria from the blood stream and vaccinating a suitable donor and then bleeding the donor and giving the serum to the patient. It is a wonder all three of them didn't die waiting for it to work. The patients got well, and, I imagine, just because it took so long a time for us to get ready that, in between times, they built up more or less resistance of their own.

DR. C. H. MAXWELL (Morgantown): Syphilis and rat fever are the only diseases that are treated with 606. The immediate and specific action on these affections is one of the miracles of modern laboratory evolvement. This action is so specific that we scarcely think of other remedies. We get our minds thinking the arsenieds are specific in these diseases, and do not think of trying them in others. Personally, I have experimented a little with neosalvarsan in anemic and general run-down conditions, and find the response has been immediate and apparently permanent. I would suggest that we experiment empirically in any blood contaminations and general debilitated conditions, when we get a Kahn negative. Try them, Dr. Biern.

DR. W. C. SWANN (Huntington): The line of thought presented by Dr. Miller was concise and clear, and it gives us something to think about. Bacteria in the blood stream isn't such a bad thing. That isn't what we fear—it is really the death of the patient we fear. We hear nowadays that acute rheumatic fever bacteria live in the blood perhaps fifteen or twenty years and the patient goes on and doesn't die from those bacteria, but dies from something else. I think we all get discouraged with the treatments we have, but we shouldn't be. We ought to try some new ones, and even the yeast, if necessary.

DR. A. H. HOGE (Bluefield): It was very timely for Dr. Miller to sound a caution in regard to the use of dyes routinely in blood-stream infections. It seems that the medical profession is divided on this question very much like the public is in regard to prohibition: physicians are either anti-mercurochrome or pro-mercurochrome. Those who are using it, though, apparently have the advantage in that they have something definite to offer their patients, while those of us who have discarded it are somewhat at a loss to offer a specific cure. The general outline and thoroughness of treatment brought out in Dr. Miller's paper will certainly be of great assistance to those of us who have discarded the use of dyes in these conditions. With all due respect to the speaker of yesterday and many other able men, it appears that we have two types of individuals in medicine who are dangerous—enthusiasts and fools. If I were sick, myself, I would always choose the fool to attend me.

There is one question that has not been thoroughly covered in Dr. Miller's paper nor in the discussion, and that is in regard to removal of the focus in blood-stream infection. Certainly some of these cases are apparently made worse by this procedure, and it would be interesting to know what the experience of others has been in regard to this.

It has been a great pleasure to listen to this wonderful discussion, and every one present should be greatly benefited by the same.

DR. W. A. WALLACE (Martinsburg): It is hard for a youthful physician to keep from becoming a therapeutic optimist. I have at present, in the City Hospital in Martinsburg, a local mail carrier who developed what we speak of as septicemia. I have used mercurochrome a number of times, and I want to thank Dr. Miller for his conservative suggestions. I had ready last Thursday some intravenous mercurochrome to give to this case of septicemia. He looked too ill to me, and I put it off until the next day. A local surgeon gave me an opinion that he would not recover. Gradually, during the past five days, the temperature has come down from 105½ and 104½ until today his temperature is running 99.2 and clinically he is a safe patient. Had I used mercurochrome at the time I

was expecting to, there would have been another supposed victory for intravenous red dye.

DR. MILLER (*closing the discussion*): I have very little to say in the way of closing this discussion except to call attention to one or two points. I did refer, in a passing way, to blood transfusions as a method of therapy in sepsis. I should like to go on record as saying that I, personally, should be the last one to use blood transfusions as a therapeutic measure in acute sepsis unless the condition of a severe anemia warranted the procedure. I think all of the accumulated evidence which was recently correlated by Doan in the *Physiological Review* is to the effect that blood transfusions as a measure of combating acute sepsis in the absence of severe anemia is not only not helpful but is harmful in the sense of inducing so frequently such violent reactions that the patients oftentimes succumb. Nor is there any evidence that I know of that the giving of analogous blood to a non-anemic, septic patient actually in any way demonstrably increases that patient's so-called immunological substances in the blood.

What some one else said with reference to the use of transfusions of so-called immunized donors, I should also like to soft-pedal a bit; for, at least from personal experience as well as the literature, the reactions induced by such transfusions are frequently and immediately fatal. If they are undertaken they should be done with a great deal of caution and reserve, and warning should be sounded in advance of such a procedure as to the possibility of a fatal exit.

As to the time of removal of foci of infection in a patient known to have a blood-stream infection or invasion, if the concept advanced is at all true or legitimate it would seem that the most urgent and immediate procedure to cut off the lines of communication from primary focus to blood stream is imperative. I feel that we should also be cautious in the sense that the culture from the so-called primary lesion should coincide with the blood culture, because there are many instances in which a primary infection is associated with a secondary invasion not necessarily associated with the lesion itself. If cultures show the invading organism in the blood the same as that of the primary lesion, I feel that eradication or drainage or appropriate measures should be instituted as early as possible, even though the patient is frequently clinically made much worse.

My whole purpose in this paper was not to ridicule my very dear friend, Hugh Young, although those of us who live in Baltimore have many a merry session together, fighting this problem out. Hugh Young is simply an enthusiast; he certainly is not a fool. We feel that his enthusiasm has gone a little bit beyond the bounds of at least proof to date, and those of us on the medical side of the Hopkins unit feel we had better soft-pedal this thing for a little while, realizing how frequent it is that if you give the patients half a chance, in the sense that we have tried to outline it today, the majority of them will handle the situation for themselves.

CHRONIC NEPHRITIS IN YOUNG ADULTS *

WITH OBSERVATIONS ON ITS ONSET AND CLINICAL COURSE

By E. L. ARMBRECHT, M.D.,
and
R. J. ARMBRECHT, M.D., B.S.
Wheeling, W. Va.

The subject of nephritis is one of such magnitude that it is necessary, in a paper of this length, to limit onself to one particular phase. Therefore, I have chosen to make a few comments on chronic nephritis in young adults, with some observations on the onset and clinical course. I will present the abstracts of a few cases to illustrate some of the various types of onset and outcome. It is manifestly impossible, in a short paper, to attempt to discuss the various theories as to the etiology, the mechanism of kidney function in health and disease, and the production of the various conditions that we find, such as edema, variations in the specific gravity of the urine, and convulsions. I will confine my remarks chiefly to what brings the patient to the physician and the clinical signs and symptoms that we note.

Nephritis is essentially the same disease in all ages, although there is a group of cases, which we all meet in practice, in which young adults, following an infectious disease or as a result of a severe or long-existing focal infection, develop a nephritis which initially involves the parenchyma of the gland in different degrees but goes on to a chronic course, and, in quite a number of cases, to a more rapid and progressive involvement of so much of the kidney tissue that a fatal issue is the result.

It seems to be pretty generally accepted at this time that nephritic involvement is the result of bacterial invasion; excepting, of course, those cases of a definite toxic origin as seen in arsenical and mercurial damage. A focal infection or an infectious

disease may initiate a focal lesion in one or both kidneys, which we speak of as a focal glomerulo-nephritis, which in turn may improve and even disappear, at least as far as symptoms are concerned, or may go on to a more serious condition which we speak of as a chronic diffuse glomerulo-nephritis. It may be that a focal glomerulo-nephritis can exist for quite a long period of time, known or undiagnosed. Whether it is known to exist or not, there may suddenly appear signs and symptoms which indicate the involvement of a much larger amount of the kidney substance. The following case is typical of what may be called an acute nephritis which does not recover sufficiently to permit adequate function:

CASE I.—W. S., age 27, a truck driver, was discharged from the army in good health in July, 1919. Was seen in November, 1919, complaining of headache, nausea, vomiting, chills, and fever. The urine was of high specific gravity and loaded with albumen and casts. He was treated for an acute nephritis, which gradually cleared up until the following March he was practically symptom-free and able to return to his usual work. The urine continued to show albumen, which, however, almost disappeared for long intervals. Te specific gravity varied from 1.005 to 1.020. He enjoyed fair health with the exception of an occasional exacerbation of symptoms until in December, 1925, he first noticed some swelling of the feet and ankles, when the general symptoms became more severe and he could not return to work, although he was able to be up and around. The systolic blood-pressure varied from 150 to 230, with a correspondingly high diastolic. The urine again became loaded with albumen and casts, and with some blood cells and pus. His condition became more serious until in August, 1926, he was forced to remain in bed. The edema increased to general anasarca, the blood-pressure remained high, the urine became scanty, and gastric symptoms developed, followed by coma and death in September, 1926.

This is a case of an acute nephritis which goes over into the chronic form, becoming what we will call a chronic diffuse glomerulo-nephritis. There is also, in these cases, evidence of tubular damage. No probable focus of infection was noted, and there was no history of any recent infectious disease. History of exposure was the only predisposing factor noted. In this case, six years elapsed before any sign of edema was present, and after its appearance the condition became very serious, resulting in death in less than one year.

Some patients give a definite history of an acute nephritis which may have lasted from a few days to many months and which then cleared up as suddenly as it appeared. It is this type of case which we are led to believe shows definite and permanent improvement; at least as far as we are able to judge from all clinical signs and symptoms and from our laboratory examinations. There probably are other cases in which the amount of kidney involvement is so small in the beginning that they remain undiagnosed for a long time, but are later recognized as a chronic nephritis, giving a history of an acute infectious disease or marked foci of infection as we see in teeth, tonsils, ears, and antra. This history may go back one or many years.

When these patients consult a physician for symptoms relative to kidney function, many of them will state that they have been in perfect health for some years, giving a past history with no promising etiological factor. Others may have a history of one or more infectious diseases with or without a definite history of renal involvement following. They will often say that persistent examination of the urine failed, for a reasonable length of time, to show any signs of kidney damage. The history of repeated sore throat may be present or the history may be negative in the presence of chronically infected tonsils and carious teeth. This, of course, applies to chronic ears, antra, and other focal infections. There is also quite a large group of cases without history and without symptoms, which are discovered in the course of periodic or insurance examinations.

A very careful and thorough search will often give a clue as to the probable etiological factor, either in the history or the physical examination, although some cases are very puzzling, as illustrated by Case II. This case is a mild type, which we may assume to be of the chronic focal glomerulo-nephritis variety:

CASE II.—C. M., a boy aged 13, comes in with the statement that he was told by a Y. M. C. A. examiner that his blood-pressure was a little higher than it should be for his age and that he had better see his physician. There is absolutely no complaint. He gives a history of rapid growth and increase in weight in the past year or two; in fact, he may well be taken for a boy of sixteen. He says he eats considerable meat, but otherwise his habits are the same as any average American boy. He has had no serious illnesses. Examination is essentially negative.

The teeth are excellent. The tonsils are small, normal in appearance, with no history of sore throat. The blood-pressure is 130/80. The urinalysis reveals a faint trace of albumen, a rare granular cast, and specific gravity of 1.024. During the following year the condition varied in its course and character. At times the urine would be albumen-free with a normal specific gravity. Again, a moderate trace of albumen would be found with a slight elevation of blood-pressure. For a period the blood-pressure was reduced to 118/78 without the use of drugs. Meat and eggs were restricted but not entirely eliminated from the diet. Severe and prolonged exertion was interdicted. Otherwise he was allowed to go along as usual. The specific gravity never went below 1.016. There were never any urinary symptoms. There was no loss of weight but a gradual gain. This case is one in which no definite focal infection was found, although somewhere there must be an etiological factor. The prognosis is probably good if he can be guarded against any discoverable focus and is fortunate enough to escape any future and serious infectious diseases.

These patients, then, either will have no complaints and will have been discovered accidentally, so to speak, or they will come in complaining of one or more of several signs and symptoms. I have found in these younger individuals that their complaints are usually one or more of the following group: A beginning frequency and nocturia, hematuria, or, in the more advanced cases and the rapidly progressing cases, nausea, backache, vomiting, and at time visual disturbances. The large majority of these cases will show, in varying degree, elevation of blood-pressure, albuminuria, occasional or many blood cells, masses of epithelial cells, casts and changes in the specific gravity. Edema is not always present, usually being seen in the late stage or in cases of long duration.

In the milder cases the blood-pressure may be normal, but is usually a little higher than we would expect under normal conditions. On the other hand, it may be very high, being somewhat dependent on the amount of kidney involvement and the duration of the disease. Hofrichter, of Seattle, states that "this increased blood-pressure is evidence of irritation of the circulatory system of the kidney," and that "this irritation may result from any persistent irritation such as the toxins of the infections."

The albumen varies in amount. The urine may be albumen-free at times and again, in the same patient, be heavily loaded. This is often variable with changes in the blood-pressure. Whether or not one is dependent on the other is difficult to state.

Sooner or later in the disease we find clumps of epithelial cells, which we assume to be from the tubules, and the various kinds of casts; usually granular and hyaline. Some workers hold the view that the tubules are dependent on the glomerular circulation for their blood supply and are therefore practically always involved. The fact that we find evidence of tubular damage so often seems to substantiate this theory or fact, whichever it may be.

Hematuria may result from damage to a small group of glomeruli, but in the more advanced cases and when persistent for any appreciable length of time it is, of course, a very grave sign. This sign is often periodical and may be absent in any given case for some time, only to reappear. It is usually indicative of considerable kidney damage and is often a hard problem to control.

The specific gravity of the urine may vary considerably in the same patient at different intervals, in the single specimens and also in the twenty-four-hour specimens. This may be the case in mild or in the moderately severe nephritics. The condition is modified to some extent by the diet and amount of fluids taken. When the specific gravity is low, along with a low urinary output, it is usually indicative of severe and extensive kidney damage. In the advanced cases and those of long duration the kidneys gradually lose the power of specific gravity fixation, which is a bad prognostic sign.

Visual disturbances may rarely be one of the complaints which bring the patient to the physician. Evidence of retinal changes is most often discovered by an oculist, who in turn refers the patient to his physician for further study. The following case illustrates an advanced chronic diffuse nephritis with practically no symptoms and one which was first discovered by an oculist:

CASE III.—Miss M. S., a teacher, single, age 31, was referred by an oculist who discovered the presence of retinitis with albuminuric deposits. This young girl stated that she felt fine and could see no reason to enter the hospital, although she was admitted January 30, 1927. There were no subjective symptoms except the visual disturbance, and later an occasional headache. Past history is negative except for frequent sore throat between the age of 15 to 21 and acute appendicitis at the age of 27. The tonsils were definitely diseased. There were several suspicious teeth found. The oculist reported a severe retinitis with some albuminuric deposits and

some retinal hemorrhages. Blood and spinal fluid Wassermans were negative, and the blood sugar was normal. Blood non-protein nitrogen was 43 and blood chlorides 445 mgms. The basal metabolism was plus 17%. X-ray studies of kidneys and chest were negative. Culture from two extracted teeth showed non-hemolytic, long-chained streptococci. The tonsils were not removed because of severe and prolonged hemorrhage following extraction of teeth. The blood-pressure varied from 240/150 down to 190/130. The urine showed heavy traces of albumen at all times. There were granular and hyaline casts with some red blood cells. The specific gravity varied from 1.002 to 1.015. This patient was discharged from the hospital on March 9, 1927, feeling fine but with no subjective or objective improvement since the time of her admittance. She returned to teaching and reported at intervals, always stating that she felt all right but with no improvement or change in blood-pressure or urinary findings. She was finally compelled to give up her work because of her eyes. She later left the city, hoping to improve by the change, but I learned that she died in February, 1928. This is a case in which we might infer that a focal infection initiated a focal glomerulo-nephritis which gradually went over into the chronic diffuse type with never any acute manifestations. It is surprising that such a degree of pathology can exist, as in the above case, with practically no unpleasant symptoms.

I might say that while these cases which do show visual signs and symptoms, without even any other marked subjective symptoms, are usually rather far advanced, nevertheless the keen observation of the specialist often enables the patient to get the proper advice which may add several years to his life. These visual disturbances, when the patient is under general care, often improve for a time, but I believe they are generally recognized as a very bad prognostic sign. Some authors go so far as to say that, after albuminuric retinitis appears, two or three years is about as long as that patient can live, regardless of the other signs and symptoms present or of the treatment instituted.

Edema, for one reason or another, is not so commonly seen in these younger individuals as in the older and terminal chronic cases in which there is a greater degree of degenerative changes. I have noted this absence of edema in several severe and more or less rapidly fatal cases. Some cases retain the power to excrete fluids even after that of excreting solid material is practically lost. This often results in the production of severe symptoms, such as convulsions, coma and death, without any marked edema. We know also that in younger individuals we have a good heart muscle to help us. Whether or not this is a factor involved in the production of edema in nephritis I would not care to state as an axiom.

Convulsions are not seen except in a small number of cases, and when present, along with hematuria, marked gastric and visual disturbances, are usually of a very serious nature. These cases are usually fatal within the year. The following case illustrates the type that is found late because the symptoms are late in developing:

CASE IV.—G. H., a single girl of 19, was admitted to the hospital January 31, 1929, complaining of blood in the urine, some frequency, and nocturia of about one week's duration. There was no chill or gastric manifestations at this time. The temperature and pulse rate were slightly above normal. Has always enjoyed good health, with no serious infectious diseases. There was no history of operations or of tonsillitis. She has worn glasses for years and has had considerable trouble with them for some time. Her glasses have always been fitted by an optometrist and the retinas were never previously examined. Examination reveals a young girl, well nourished and apparently in the best of health. The urine shows a moderately heavy trace of albumen, many red blood cells, and some granular and hyaline casts. The specific gravity was 1.005. The blood-pressure was never high. The red blood cell count and hemoglobin were somewhat lowered, probably as a result of the hematuria. The cystoscopist reported some congestion in the bladder wall but was unable to enter the ureters. There was no edema present. After a short stay in the hospital the patient felt so well she was allowed to return to her home. The nocturia had almost disappeared and there were very few blood cells in the urine specimens. In a short time she again became worse and was again compelled to remain in bed. Gastric symptoms developed. The vision became poor, the ophthalmoscope revealing hemorrhage and albuminuric deposits. The condition failed to respond to treatment. The girl had several convulsions and died in March, 1929.

This is another case in which it is hard to say definitely where lies the etiological factor. The history of her visual disturbances and her difficulty in getting glasses leads us to believe that she may have had a mild degree of retinitis for some time.

Here, again, we might assume that a focal type of lesion may have been present in one or both kidneys for some years. This patient was very comfortable until the gastric symptoms arose, and toward the last, when she had several convulsions before her death, which occurred barely two months after the hematuria was noted. There are approximately two million glomeruli in the human kidney, and as the disease progresses these structures are gradually but surely destroyed until the kidney is no longer able to filter and excrete the fluids and waste products and the disease proves to be fatal. Some of these substances which we know considerable about, such as urea, uric acid, and creatinin, are responsible in some degree for the serious symptoms above mentioned, when the kidney is no longer able to eliminate them from the blood stream. There are probably other substances which act in the same way with which we are not yet familiar, but which, when accumulated in the blood stream, aid in the production of elevated blood-pressure, gastric manifestations, convulsions, and death. It has been shown experimentally in animals that there are substances (guanidine, for instance) which will produce the symptoms mentioned above and result in the death of the animal.

Just a brief word as to the treatment of these various types of cases, which very often tax our ingenuity as well as our patience. I do not believe the milder cases should be particularly restricted. It is well to instruct these patients in the hygiene of the skin as a source of elimination. Protein might well be allowed in moderation. The most important factor is the removal of all discoverable foci of infection and alertness to discover any which might subsequently develop. Warning should also be given as to unnecessary and prolonged exposure and exertion. The more advanced cases must be handled as symptoms arise and efforts made to further the best elimination for each particular individual.

The great amount of work which has been and is being done on this subject, in this country and abroad, is indeed encouraging. I believe that the near future will find nephritis in the same category with other diseases about which we are more sure of our knowledge and over which there will be less difference of opinion. The physiologist and the chemist are helping us to fill gaps in our knowledge of nephritis which the clinician alone could never hope to do.

SUMMARY

The following points are emphasized:

1. The prevalence of kidney damage in young adults.

2. The importance of focal infections as an etiological factor.

3. Necessity of eliminating foci of infection in kidney disease and guarding against development of new foci.

4. The conception of focal kidney lesions is supported.

5. The common association of glomerular nephritis with degenerative tubular changes.

SOME DIFFICULTIES ENCOUNTERED IN THE DIAGNOSIS OF ABDOMINAL CONDITIONS *

By JULIUS FRIEDENWALD, M.D.
Professor of Gastroenterology
and
THEODORE H. MORRISON, M.D.
Associate Professor of Gastroenterology
University of Maryland
Baltimore, Md.

The great difficulties encountered in the diagnosis of many abdominal affections have long been recognized. Notwithstanding the many advances made in recent years in the recognition of these conditions, including the use of the latest and most accurate methods, the solution of many of these problems often remains obscure and is indeed impossible. At times, when all of our resources are finally exhausted, an exploratory incision becomes necessary to clear up the diagnosis; and even then it is possible, notwithstanding the most careful and painstaking abdominal exploration, that a diagnosis may still remain in doubt or that even an incorrect conclusion may be drawn. The difficulties arising in diagnosis may be due to a number of causes. Of these may be mentioned:

1. Urgency of the operation as an emergency so that a thorough investigation is inadvisable on account of the increased risk.

2. To carelessness or unwillingness on the part of the physician to devote sufficient time to a thorough study of the clinical aspects and examination of the patient; and,

3. Misinterpretation of the signs and symptoms or insufficient evidence for arriving at a correct conclusion.

---

* Presented at the meeting of the West Virginia State Medical Association, Martinsburg, W. Va., May 21, 1929.

From the Gastroenterological Clinic of the Department of Medicine University of Maryland.

1. It is quite conceivable that in acute or even in chronic affections with urgent and imminent signs that the condition may be of such a nature as to require immediate operation so that the surgical procedure is performed before the usual and necessary examinations can be completed. However, since operation is almost always indicated in such conditions not infrequently as a life-saving measure, the diagnosis can be made at the time of the operation. Even in such emergencies it not infrequently happens that the diagnosis may be extremely difficult, inasmuch as the condition of the patient may be so precarious as to contraindicate any extensive exploration of the viscera or to administer prolonged anesthesia. On this account the surgeon is frequently forced to abandon further investigation before the diagnosis is completed, directing his attention to the obvious conditions, perhaps overlooking important affections which may be present.

The following case, briefly abstracted, illustrates this condition: E. S., female, aged 54 years, had complained for a period of three years of dysmenorrhea associated with uterine hemorrhage, which had progressed to such an extent as to produce great exhaustion and marked anemia. During the past three or four months the condition became complicated by the addition of severe indigestion in the form of discomfort in the upper abdomen with occasional nausea and vomiting. On examination a large uterine fibroid was detected and operation was advised; the digestive symptoms being considered as secondary to the uterine disease. At operation a hysterectomy was performed, following which the patient seemed so badly shocked that further exploration was contraindicated. Recovery from the immediate effect of the operation was satisfactory, but the indigestion became more and more aggravated, and after a thorough gastrointestinal investigation was made, including an x-ray examination, a carcinoma of the stomach situated near the pylorus was discovered. This condition was verified by a subsequent operation, but the involvement of the stomach, together with metastases in the liver, was so extensive that a gastroenterostomy was all that could be accomplished. Had the exploration been more thorough at the time of the original operation, the carcinoma of the stomach would have been discovered at an earlier period, when resection might have been undertaken with possible success.

2. One recognizes only too well that operations are often undertaken without a preliminary thorough study. As a direct consequence, we frequently see many abdominal scars, some unnecessarily made, and not uncommonly more than one in the same individual. These abdominal scars are often indicative of painful and deforming adhesions which give rise to far more serious symptoms than the original difficulty. We are firmly of the conviction that no effort should be spared in arriving at a correct diagnosis before operative procedures are undertaken, and that carelessness in this direction may lead to more or less serious consequences.

The following case illustrates this fact: M. G., female, aged 35 years, had had discomfort in her right lower quadrant at varying periods for three or four years, which became more aggravated during the menstrual period. An examination by the family physician revealed a slight tenderness over McBurney's point, but there had never been any rise in temperature and the patient's digestion and general condition remained normal. The tenderness persisted and soon the discomfort was so constant that the patient began to have difficulty in walking. Following another superficial examination, a diagnosis of chronic appendicitis was made and appendectomy advised. At the operation the appendix, which on subsequent pathological examination showed but slight chronic inflammatory changes, was removed. The patient had only moderate relief from her distress and two months later she was suddenly seized with violent, colicky pain passing from the right lower quadrant to the back, requiring opiates for relief. This was soon followed by the passage of bloody urine. A thorough cystoscopic and x-ray investigation revealed a large stone in the pelvis of the right kidney. The calculus was removed, with subsequent relief from all symptoms. Had a careful examination been made originally, the first operative procedure would have been unnecessary and the patient would have been spared a long period of suffering.

3. By far the greatest difficulties in abdominal diagnoses are due to the misinterpretation of the signs and symptoms present and from the failure to properly evaluate the data obtained so that erroneous conclusions are drawn. Frequently, notwithstanding the fact that a thorough investigation has been conducted, a correct diagnosis still remains impossible. This may be due to a number of causes, among which the following may be mentioned: First, the signs produced by the disease may not be sufficiently distinctive of the affection or these signs may be so atypical as to suggest other conditions. Second, in some instances we may be misled by a single sign or

examination which points almost conclusively to a definite affection, but which on closer observation may point to an entirely different condition.

In this regard it may be of interest to draw attention to the studies of Bettman, who, in an analysis of 300 cases in which appendectomies had been performed without relief, found after a thorough inquiry into the histories that 170 of these could be included for purposes of analysis without question as to the ultimate correctness of the diagnosis. The accompanying table presents the result of his study.

UNSUCCESSFUL OPERATIONS FOR APPENDICITIS: CAUSES OF FAILURE

Causes of Failure	*No. Cases*
Very inadequate study of the patient; very imperfect indication for any operation	66
Symptoms due to gastric or duodenal ulcers	20
Symptoms due to disease of the gallbladder	16
Misleading rontgen ray reports	10
Genitourinary cases	9
Symptoms due to colitis	12
Symptoms due to pulmonary tuberculosis	9
Neurasthenic origin of symptoms	8
Symptoms due to inguinal hernia	3
Pinworms	2
Acid gastritis	2
Ovarian disturbances	5
Various conditions, including gastric crises, cardio-renal disease, endocrine disturbances, pellagra, focal infections in the throat and accessory sinuses	8
Total	170

Furthermore, in a recent paper, Beck and Goldstein report that they have been able to clarify certain cases presenting diagnostic difficulties by special urological examination. In a series of 40 cases with vague symptoms referred chiefly to the gastrointestinal, neuromuscular, cardiovascular and endocrine systems, in 35 of these definite urologic pathological lesions were found. In 18 gastrointestinal symptoms dominated the clinical picture.

The following cases will illustrate some of these diagnostic difficulties:

CASE I.—W. H., male, age 56, consulted us on June 12, 1923, complaining of indigestion of three months' duration, consisting of pain in his abdomen radiating to the back, not especially influenced by food. There were no other symptoms of importance. The physical examination disclosed much crown and bridgework in the mouth and some tenderness under the left costal arch; the findings were otherwise negative. The laboratory tests were also negative except for the presence of a true achylia as evidenced by a fractional gastric analysis. The x-ray examination showed a cow-horn stomach with the pylorus and duodenum pulled to the right, a large filling defect was noted on the lesser and greater curvature; there was no obstruction at the pylorus. The latter examination was repeated in a week's time following thorough atropinization. On account of the patient's age, the vague digestive symptoms and the strongly suggestive röntgen findings, the diagnosis of carcinoma was made and an exploratory incision was urged. At operation no evidence of malignancy was discovered and only a few adhesions in the upper right quadrant were noted. This case indicates conclusively that we can not rely on röntgen ray findings entirely.

CASE II.—W. C., male, aged 65, was admitted into the Mercy Hospital on August 23, 1923, complaining of vomiting large quantities of bloody fluid. He was unable to retain any nourishment; the vomitus was of a coffee-ground character and of a rather pungent odor. Thirteen years previously he had a similar attack, the condition having been diagnosed as a gastric ulcer. In March of 1922 he had "growths removed from both sides of his jaw and upper lip," which were demonstrated to be epitheliomata. On physical examination a generalized abdominal tenderness was noted but no masses could be palpated. The laboratory examination revealed a moderate secondary anemia; the gastric analysis showed a total acidity of 50 and free hydrochloride of 10; occult blood was present in the stools. The x-ray disclosed a defect at the pyloroduodenal junction without pyloric obstruction. On account of the serious state of the patient a transfusion was given and fluid was forced by bowel and by infusions. The differential diagnosis in this case lay between ulcer and cancer, with the clinical data favoring malignancy. A surgical consultation was held, and, due to the patient's impoverished condition, the risk of operation was considered too great and it was decided to continue medical treatment. After ten days gradual improvement ensued; a modified Sippy régime was instituted, and the patient left the hospital on October 3, 1923, perfectly well. When we last saw him, on December 9, 1925, he appeared perfectly normal. The most interesting feature of this case is that in spite of the patient's age and the past history of ulcer, together with the definite finding of malignancy of the lip and cervical glands, it was evident that we were dealing with a benign ulcer of the stomach.

CASE III.—A. K., male, age 52, complained of indigestion of two years' duration, consisting of pain usually relieved by food, appearing again, however, when the stomach became empty. Recently he had a rather profuse hemorrhage from his bowel. He

was thoroughly studied in New York, where a definite diagnosis of pyloro-duodenal ulcer was made, and he was given an ulcer treatment, including a two-week period of duodenal feedings. He was very much relieved; but, a few months later, his symptoms recurred and he consulted us on April 12, 1924. A physical examination at this time revealed nothing of any moment except that the patient presented a rather marked pallor and there was a distinct tenderness in the epigastrium. The gastric contents disclosed a hyperacidity. An x-ray examination revealed the heart, lungs, and esophagus to be normal; the stomach presented a persistent defect in the pyloro-duodenal region. Occult blood was continually present in the stools. The blood showed a marked secondary anemia. A diagnosis of ulcer was made and a Sippy treatment instituted. The appearance of the patient gradually improved, though occult blood was persistently present in the stools. The röntgen-ray examination was repeated on several occasions in June and again in July, and on each occasion the röntgenologist reported a healing ulcer, the esophagus being negative in June, but in July a spasm at the cardia was noted. Several months following the ulcer treatment a relapse occurred, and in addition to the gastric distress the patient began to complain somewhat of a mild dysphagia. Exploratory laparotomy was thought advisable, and at the operation on July 16, 1924, following a transfusion, a large carcinoma involving the cardiac end of the stomach was found. The pylorus was normal. The patient died on July 19, 1924. This case illustrates that, in spite of all the clinical evidence which pointed definitely to a pyloric lesion, the correct diagnosis was devealed only at the operation, the lesion being limited entirely to the cardia. The importance of the persistent presence of occult blood in the stools as a positive evidence of carcinomatous ulceration was forcibly brought out in this patient.

CASE IV.—J. D. S., female, age 45, had never been ill before the onset of the present illness, which was of six months' duration. The principal symptoms complained of were attacks of upper abdominal discomfort of mild severity, much flatulency, belching, anorexia, nausea, and constipation. In June of 1923 she consulted Dr. Sippy, who, after a routine gastrointestinal examination, made a diagnosis of cholelithiasis and advised an operation. In October, 1923, her gallbladder, which contained two stones, was removed. No other abdominal findings were noted at the time of the laparotomy. For a short while the patient was relieved, but soon she began to complain of anorexia, nausea, inability to retain any nourishment, loss of weight (from 185 to 135 pounds), weakness, and constipation alternating with diarrhea. She then consulted us in January, 1924, when the physical examination revealed a markedly emaciated individual with a very dry and pallid skin, but no abdominal masses could be palpated. No gastric analysis could be made, since the patient was unable to swallow the tube. The blood picture disclosed a moderate secondary anemia; the stools presented occult blood and mucus. The röntgen-ray examination showed an active spastic stomach, with the pylorus and duodenum held up in the upper right quadrant region, but no defects could be detected; the colon was prolapsed and there was evidence of mucous colitis in the descending colon. The barium enema showed some evidence of mucous colitis. A proctoscopic examination disclosed nothing abnormal. After due consideration and following a surgical consultation, an exploratory laparotomy was advised and at operation a general carcinomatosis involving the small intestine and sigmoid was found. The patient died several days later. This case illustrates our difficulty in making a diagnosis even after a most painstaking study. Another interesting feature is the fact that, three months prior to the final operation, she had a cholecystectomy performed, when a thorough exploration of the abdomen failed to reveal any evidence of malignancy. Of course, it is quite possible that the growth may have developed in the interval between the operations, but since the relief afforded by the first operation was only of short duration, it is probable that the malignant process had already been present when the abdomen was first opened.

CASE V.—F. K., male, age 30, consulted us on March 30, 1924, complaining of indigestion ever since he had recovered from an attack of typhoid fever seven years ago. The symptoms consisted of acidity, pain in the stomach relieved by food, the discomfort recurring in three-fourths of an hour; flatulency, and headaches. The positive findings were a tender area in the epigastrium, a hyperacid gastric juice, and a deformity in his duodenum, as evidenced by the x-ray. A diagnosis of ulcer was made. He was given an ambulatory medical treatment with a very favorable result. However, in September, 1924, he had a fainting spell following which he passed quite a few black stools. He was then given a modified Sippy treatment of four weeks' duration, to which he responded in a very satisfac-

tory manner. On December 4, 1924, he suddenly had an acute attack of appendicitis. At the operation an acutely inflamed appendix was removed, the gallbladder drained, and a scar of the old duodenal ulcer was covered with omentum. The patient made an uneventful recovery. On January 21, 1925, he was suddenly seized with acute abdominal pain. The abdomen was rigid, the skin was cold and clammy, the pulse rapid and feeble. On account of the past history and the abdominal findings, it was thought that the old ulcer had perforated. He was hurried to the hospital for operation. At the hospital, however, for the first time, signs of pneumonia were discovered in the right lung, which later invaded the left lung. The patient died of a fulminating type of pneumonia on January 22, 1925. No autopsy was permitted. This case proved very instructive, since it showed that pneumonia may be ushered in with severe abdominal symptoms. This occurs frequently in children, but is not so commonly observed in adults. This case serves to stress the importance of a careful chest examination in spite of the apparently obvious abdominal catastrophe with which we at first thought we were dealing.

CASE VI.—S. F., male, age 60, who consulted us in May, 1925, had been subject to periodic attacks of stomach trouble for 30 years. The present attacks began six months ago, the symptoms consisting of pain in his stomach appearing from two to three hours after meals, constipation, belching, weakness, and a loss of 25 pounds in weight. The physical examination was negative, except for a slight enlargement of the liver and some tenderness in the epigastrium. There was a moderate hyperacidity and the röntgen ray disclosed a defect on the lesser curvature near the pylorus which suggested malignancy. On account of the individual's age, the great loss of weight, and the x-ray findings, a malignant gastric lesion was suspected and operation was urged. At the exploration a gallbladder filled with stones was removed. The stomach was found perfectly normal. The patient made an uneventful recovery.

CASE VII.—L. M., male, age 33, consulted us in June, 1921, complaining of pain in his stomach when empty, relieved temporarily by food; fullness, distention, and occasional attacks of nausea and vomiting. These symptoms had been noted for the preceding nine months. Recently he had vomited some food ingested the day previously. He had lost about five pounds in weight. The physical examination was practically negative except for the presence of a McBurney and a right rectus scar from previous operations (acute appendicitis three years ago, followed in a few months by an attack of intestinal obstruction), a definite tenderness under the right costal arch and in the epigastrium, and suspicious movements over the abdomen, suggestive of peristaltic waves. The gastric analysis revealed a total acidity of 31, free hydrochloride of 9, and a marked retention of food from the previous day. The stool contained occult blood. There was a moderate secondary anemia, and an x-ray examination showed a benign pyloric obstruction with 48-hour retention of the barium meal. A diagnosis of pyloric obstruction, probably benign in character, was made and an exploratory laparotomy was urged. At the operation a thickened pylorus with obstruction was found, some glands were palpated along the lesser curvature, and a suspicious nodule was discovered in the liver. A posterior gastroenterostomy was performed and the surgeon was under the impression that we were dealing with a malignant ulceration at the pylorus with obstruction, and with metastases in the liver. The pathologist also thought the section strongly suggested a cancerous lesion. The patient made an uneventful operative convalescence following which he was given a few radium treatments. Six months later he consulted a prominent gastroenterologist in New York for more radium treatments. The following excerpt from his letter to us is self-explanatory:

"I am sure you will be again interested in seeing the bearer, who came to me in search of radium treatment for a supposed cancer of the stomach. According to his story, this was a surgeon's diagnosis at the time of the operation. I questioned the original diagnosis of carcinoma, and therefore reëxamined him and also re-x-rayed him. We found the stomach functioned perfectly, no delay, and no evidence of neoplasm. Apparently this is one of those cases of inflammatory peripyloritis."

The patient is perfectly well today in so far as his gastrointestinal tract is concerned.

CASE VIII.—G. H., male, age 68, first consulted us on April 14, 1920, for a digestive disturbance. The symptoms complained of were pain in the left arm, occasionally in the right, at times brought on by exertion and overeating; distention and fullness after food, flatulency, and belching. The physical examination revealed nothing abnormal except a slight enlargement of the liver and some tenderness under the right costal arch. The urine was normal. A gastric analysis revealed a total acidity of 55, free

hydrochloride 20. The blood-pressure was 140/100. The blood, stool, and Wasserman tests were entirely negative. The x-ray investigation showed 14 gallstones by actual count. The patient refused operation, so that a medical régime was outlined which gave him considerable relief until July 16, 1927, when, following an indiscretion in diet, he had a violent attack of pain extending from the back between the shoulder blades to the left shoulder down to the elbow, together with some twinges in the right upper arm. The pain was so intense that it required a half-grain of morphine for relief. With the attack there was considerable belching but no abdominal discomfort or tenderness. A physical examination disclosed no abnormalities. It was difficult to decide whether we were dealing with a case of angina pectoris or cholelithiasis with atypical radiation of pain. Another plain x-ray plate showed the presence of the gallstone shadows. The patient had a series of milder attacks of a similar nature, however, and, after one of these attacks, bile appeared in the urine and an icteric tint was first noticed in the sclera. After several days' observation and failure to secure relief by rest and rigid dieting, surgical intervention was advised. The gallbladder, containing numerous stones, was removed on July 29, 1927.

The patient made an uneventful recovery and has had no recurrence of his attacks of pain. This case is extremely interesting from a diagnostic viewpoint, since it illustrates the difficulty that can arise at times in differentiating between biliary colic and angina pectoris.

In order to avoid diagnostic pitfalls ,some routine method of examination should be adopted. The following is a useful outline which we follow in our clinic, some of the examinations being performed only as indicated:

1. A carefully obtained history, using a special sheet in order to obtain uniform data.

2. A general physical examination.

3. Laboratory examination, including urine, blood, stomach contents (fasting and after a test breakfast, fractional if indicated), feces on ordinary or meat-free diet. Wasserman reaction (blood and spinal fluid), biliary drainage, liver and pancreatic functional tests, basal metabolism, and blood chemistry.

4. Röntgen-ray examination of the gallbladder region, and after a barium meal, barium enema and cholecystography with the oral administration of sodium tetraiodophenolphthalein. Thorough atropinization is utilized to rule out spastic defects.

5. Proctoscopic examination.

6. Urological examination.

7. Pelvic examination.

8. Exploratory laparotomy.

In conclusion, we hope that we have, in a measure at least, indicated the difficulties which may arise in the diagnosis of abdominal affections and the importance of drawing conclusions only following the most painstaking investigations. For, even in spite of most careful studies, as we have shown, errors in diagnosis may still arise. These may, however, be materially diminished, provided the plan already outlined is carefully followed.

Discussion

DR. C. W. WADDELL (Fairmont): Dr. Friedenwald's citation was very unusual and mostly atypical cases. I think it is very gratifying that many of our patients could not hear many men of Dr. Freidenwald's caliber acknowledge the difficulties in making abdominal diagnoses.

DR. W. C. SWANN (Huntington): Dr. Friedenwald in his paper didn't mention the fact that the electrocardiograph may give very valuable information in cases in which the pain in th ecoronary artery referred to the gallbladder region might confuse the diagnosis. I would like to ask him if they have used the electrocardiograph in diagnosing these cases, if they have been able to demonstrate any cases of trouble with the coronary artery in cases getting ready to be operated on for gallbladder, and if electrocardiographic findings were contraindications for operation?

DR. FRIEDENWALD (*closing the discussion*): One of the great difficulties in diagnosis of gallbladder conditions is just the condition which was mentioned. The coronary artery is diseased in the form of a coronary thrombosis and angina pectoris, and many of these cases wander into the gastroenterological clinic with the idea they have gastric disease. In many of them, the diagnosis is quite evident from a simple examination. In others, it requires a great deal of careful study in order to differentiate between these conditions. I believe that sometimes the electrocardiograph will help us out in this direction, though, of course, it isn't necessary in all instances. A careful clinical observation is usually sufficient, but in those cases that give us the greatest difficulty one should be on the lookout for these cases. In all cases where there are gallbladder symptoms of

an atypical type, one should always think of the possibility of cardiac lesions. Many a case has been operated on for gallstones or for gallbladder disease when the actual condition was cardiac.

PUERPERAL ECLAMPSIA *

By G. R. MAXWELL, M.D.
Morgantown, W. Va.

For a better understanding of that which I am about to present, I beg my hearers to recall the very important papers on the subject of eclampsia which were presented at the Dallas meeting of the American Medical Association in 1926 and are to be found in Vol. 87, No. 4 (July 24, 1926, issue) of that Journal.

It appears to be more and more acceptable that the first cause of this syndrome is an endocrine imbalance. This disturbance is attributed to an evident toxin action, which may be due to the placenta, the fœtus, or the mother's disturbed metabolism. There are numerous partisans of a special placental toxin, but a growing hypothesis is that the developing pregnancy, in the predisposed subject, first induces an excess reaction of the suprarenals and consequent supersaturation of the organism with the adrenal secretion. It is questioned that there is an excess of adrenalin in such patients, and endocrinologists will then at once understand the inevitable imbalance of the various other endocrin reactions that are quite sufficient to explain these typical toxemic symptoms which make up the syndrome of eclampsia.

So typical are these toxemias that Volhard closely identifies them with that type of spastic uremia designated as pseudo-uremia. In both, the contraction of the blood-vessels is a cardinal point, though not necessarily entailing any hypertension. Hulse's investigations are to be remembered, however, in which, where no preëxisting epinephrine was determinable, the injection of serum from either a nephritic patient or of an eclamptic demonstrated an action of increased epinephrine.

Following further this line, Zangemeister's investigations indicate (and this is the belief of Wieloch) that pregnancy-nephritis and eclampsia are sequelæ of an abnormal permeability of the vessel walls, with resulting edema of the brain, which is the cause of the convulsions of eclampsia. Systematic weighing of a subject permits detection of the insidiously forming edema in time for the taking of measures to combat this tendency toward edema and to ward off any threatening pregnancy nephritis. Hulse further deduces that the well-known lesions of the liver and kidneys that are found in eclamptic cases are likewise resultant of the constriction of the small blood vessels, and he contributes evidence that the high blood-pressure so frequently met with is resultant of peptones in the blood as a result of the metabolic disturbances in eclamptics and helps us to understand this vascular constriction by its close analogy of eclampsia to acute glomerular nephritis where we are familiar with the existing arteriolar contraction—a general toxic vascular spasm.

Without denying the vascular constriction rôle, Louros maintains that this is secondary; that the constriction of the peripheral blood-vessels in pregnancy is consequent of extreme dilatation of the abdominal blood-vessels resulting from particular stimulation of the vagus nerve (vagotonia) of this vascular system.

In an article in the *Cincinnati Lancet Clinic*, Dr. Martin H. Fisher says: "Eclampsia is caused by toxin. The symptoms are not manifested until the system is saturated with the poison. If we remove the fœtus we may stop the elaboration of the toxin, but we do not remove the toxin already ravaging the body. If the poison has not already overwhelmed the woman, the removal of the fœtus may save her life." He compares it with typhoid fever, in which disease we have no knowledge that the patient is ill until the toxin has so completely overwhelmed the patient that he is prostrated. If the intoxication in eclampsia is severe enough, the shock and strain of the removal of the conception may be enough to finish the work and the woman will die. Thus we may explain why so many women continue to have convulsions after delivery at term. Or if a parturiant has not had any signs of eclampsia until after delivery and then becomes suddenly eclamptic, we may say that she was saturated with the poison and that it took but the strain of the delivery to give us "the straw that broke the camel's back."

Dr. S. J. Goodman, of Columbus, Ohio, gives this theory: There is a disarrangement of coördination between the physiologic actions of various organs of the body caused by pregnancy. This is due to the elaboration and absorption of some of the toxin and is manifested by convulsions. We do not know from where this toxin comes, although many of the best and most recent investigators trace its formation to

---

* Read at the meeting of the Central West Virginia Medical Society at Buckhannon, W. Va., October 12, 1927.

the placenta. The removal of the fœtus does not always bring these organs to normal coördination, and the convulsions may continue until death occurs either from exhaustion or toxemia. In fact, removal of the fœtus is often followed by increased severity of the disease.

With this general line of etiology and for more precision of our subject is the classification of Levy-Solal of three types of eclampsia: nephritic, hepatic, and anaphylactic. The latter occurs in women free from all renal or hepatic lesions, in whose blood occurs an antigen inductive of the convulsions. The origin of such antigen is attributed to the fœtus, because the convulsions cease when it is no longer living, and the passage therefrom to the mother is no longer possible. The antigenic nature of such induced attacks is proven by their suddenness of onset, and the experimental side with animals confirms this. Intracardiac injection of serum from eclamptics induces a colloido-clastic shock, from which such animals can be desensitized (immunized) by preliminary injection of a minute dose of the serum. In such strictly anaphylactic type of eclampsia good results are obtained with intravenous pilocarpine therapy after withdrawal of a small amount of blood.

There is still debated the value of blood chemistry in eclampsia, but it is now well established that in preëclamptic states there is a determinable increase of the blood-phosphorus where eclampsia is threatened. There is a decrease of blood-calcium, which is the more marked in bigeminal states, and this hypocalcemia is frequently accompanied with an increased acidosis and a decreased alkali reserve. Retention of non-protein nitrogen in the blood is quite universally admitted, as well as unbalanced metabolism. Uric acid is usually high, as also markedly increased lactic acid which is not entirely due to hypermuscular activity. There is decreased carbon dioxide combining power—often very pronounced—and a definite tendency to hyperglycemia, frequently accompanying the increased inorganic phosphorus. There is a tendency to attribute any increase of non-protein nitrogen as limited to cases in which the eclamptic has been superimposed upon the nephritic subject, or in cases of great severity at the final stages.

Pathology.—In the liver are found the most pathological changes. These are really the only definite and characteristic changes. Throughout the organ will be found areas of anemic and hemorrhagic necrosis, resulting apparently from the thrombosis of the smaller portal vessels. According to Williams, the necrotic processes of the eclamptic liver are to be sharply differentiated from those of the vomiting of pregnancy by the fact that they result from extension of a thrombotic process and involve chiefly the periphery of the lobules, while in the vomiting of pregnancy the necrosis begins in the center of the lobules. Some kidney changes are nearly always found, but they are very variable.

In 90% of all pregnancies the eyes are involved to some extent, and in preëclamptic subjects the diagnosis of their state is often facilitated by the routine procedure of eye examination in all cases of pregnancy. These eye changes are attributed to the physiological enlargement of the pituitary gland, causing different degrees of compression of the optic nerve and consequent contractions of visual fields. In marked cases, more or less venous stasis of the retina can be attributed to the same origin. There occurs temporary but decided loss of control, as well as temporary vision, amounting to practical blindness at times; probably an acute obstructive retinal stasis and edema, where no gross renal or obstetric pathology is determinable. This may be the direct effect of excessive pressure on the optic nerve, or a combination of the two factors. In these cases there are subjective symptoms, headache, nausea, vomiting, epigastric and clonic distress, quite probably due to the intracranial pressure of the hypertrophied pituitary gland as well as its greatly increased function. Careful separation of symptoms into those of pituitary origin and those of real toxemia of pregnancy, with accurate knowledge of their relative importance, will result from the systemic examination of the visual fields and eye-grounds of all pregnant women, particularly those who, late in their pregnancy, suffer from the above symptoms.

The improved results and prognosis of early treatment of the preëclamptic makes the diagnosis extremely important, and to this end it is well to recall that the earliest evidences of toxemia are usually the rise in blood-pressure, which, by its slow increase, particularly of its diastolic number, usually means an increasing toxemia. Coincident with the established hypertension there shows, in general, an albuminuria. The 24-hour output of urine falls below two pints and the systematic weighing of the patient will show increasing body weight (other than normal for the pregnancy, possibly running to 25 pounds). This is shortly followed by manifest edema of the face, hands, and feet. Now comes constipation, burning and distress of the stomach, frontal headache, and

the eye changes now sufficiently develop to range from spots before the eyes to a state of amaurosis.

When gastric acidity or frontal headaches appear, there is to be feared a quickly impending convulsion.

There is little need for me to dwell upon the diagnosis of such a typical toxemic syndrome as eclampsia; but a moment may be taken to signal possible error. Tieber tells of a case of a 30-year-old woman entering the hospital with a diagnosis of eclampsia which was determined to be encephalitis due to arsphenamine poisoning—a diagnosis confirmed by autopsy—and of another case, a woman 23 years old, first diagnosed as eclampsia, then tentatively as epilepsy, when a definite diagnosis of syphilis of the central nervous system was ultimately established and confirmed.

Systematic routine examination of all pregnancies —blood analyses, blood-pressures, weighing, control of eye-grounds, urine, etc.—will bring to clear diagnosis the preëclamptic at a very earl stage, when they can, in a large number, be controlled by diet—abundant carbohydrate feeding, moderate protein, limited fats (alkaline mineral waters used for drinking, but preferably milk), and insistence upon a high degree of salt-free diet. In so far as the hypothesis of hyperpermeability of the cellular walls is admitted, the intramuscular injection of 5 c.c. of a solution of gelatine, or preferably of 10 c.c. of a 5% solution of acacia, is indicated at this stage. It has proven efficacious in reducing the weight (edema) in 80% of 51 women in whom it was used by Weiloch. In three cases of this series, the blood-pressure was reduced at the same time, according to the persistence of the weight. Such injections are given daily or at longer intervals when efficacious. As sedative, allonal to the point of quiet sleep is preferable and usually more ecective and better taken than chloral or its derivatives.

Warm baths night and morning, of about twenty minutes' duration, are excellent as a routine procedure in all pregnancies and are very helpful in preëclamptic precautions.

It is to be remembered that the thyroid function is depressed during pregnancy, and that the thyroid secretion is a valuable controller of excess adrenal function. The administration of this endocrine product at this time is indicated to combat the tendency to pregnancy edema.

The usual blood calcium is considered to have an inhibiting effect on the vicious circle of increasing irritability of that nerve. Therefore, there is every indication for reëstablishing the normal calcium content of the blood by milk feeding, with parathyroid extract or by intravenous calcium chloride medication. Every administration of calcium should be accompanied by an assimilable salt of phosphorus.

In particular cases where the intracranial pressure fails of control by usual measures, and solely in the preëclamptic stage, lumbar puncture is useful and may be resorted to early and often to the advantage of the patient. The relatively favorable results of trephining as a last resort in extreme cases seem to indicate its more extended and earlier use.

As the toxemia increases and we pass from the preëclamptic to the threshold of eclampsia, we turn our therapy against the intoxication of the organism. Such therapy divides at once on a very radical issue: First, radical intervention, which means the immediate termination of the pregnancy; and, second, the conservative therapy which embraces all possible means to control and eradicate eclampsia without interfering with a normal delivery of the child.

Radical therapy has been very widely practiced and insisted upon in Germany and in this country, but has always been severely criticized by the French school of medicine, which latter is now winning the day. Many former adherents of radical therapy are now strongly against their former position, and statistics are strongly against radical intervention. Without going into long statistical tables, the following of Whitmore is illustrative of the present position: Of 110 cases of eclampsia, 40 were treated conservatively, with 4 deaths, while 70 were treated by the radical termination of the pregnancy, with 14 deaths. Wilson makes the statement that the end results of conservatively treated cases are twice as good as those submitted to radical termination. He is insistent upon the fact that those cases of eclampsia do best which are subjected to the minimal amount of obstetric interference.

While on the subject of statistics, it may merit mention that, of 42,070 deliveries studied, there were 222 cases of eclampsia, of which 129 were primiparæ with 26 deaths, and 93 multiparæ with 21 deaths. One hundred and ten antepartum cases terminated fatally in 27 cases; in 51 intrapartum cases there were 11 fatalities, and in 61 postpartum cases the outcome was fatal in 9. Of 96 cases, 43% developed during the last month of pregnancy, and in 53 cases 24% developed during the eighth month. There was a gross maternal mortality of 21% and a fœtal mortality of 45%. Bund finds that the probability of recurrence of eclampsia in a subsequent pregnancy is 20% of chronic nephritis, developing

later is 10%, and of subsequent epilepsy is 4%. Of the children thus born, 13% died in the first few weeks, but after such period the prognosis for the child is good. Late statistics of 119 cases of eclampsia at the Clinic of Leipsic show a corrected maternal mortality of 5.8% with the child mortality not quite 9%.

The therapeutical measures that we are about to describe have very deeply changed the status and point of view of the physician relative to a case of eclampsia, a change of vital import to a discussion that we will invite later.

We have before us a typical toxemia, and our methods of attack are consequently concerned with the prevention, neutralizing or antagonizing of the poison.

In discussing the preëclamptic stage we have outlined the close relation of endocrine therapy to re store the endocrine balance. In this, and also in a special endocrine medication or detoxication, lies what is perhaps the most scientific line for future perfection of rational therapy.

The oldest, still foremost, and most immediate and effective means in the face of toxemia is the established therapy of blood-letting. At the first menace of developed toxemia, the first thing to do in all cases of impending eclampsia is to bleed the patient. In all cases this is an effective and safe procedure, taking from the patient, as soon as possible, from 600 to 1,000 c.c. of blood, according to the severity of the impending danger, the height of the blood-pressure and the weight and plethor of the patient. Some teach that bleeding should be first and foremost in our therapy of eclampsia and is to be repeated and, in emergency, still repeated and accompanied with blood transfusions where the loss of blood would otherwise be too great in extreme cases.

The next step in therapy is to detoxicate. This is rapidly accomplished by the use of properly prepared and standardized extract of liver tissue. One preparation is anabolin, made by the Harrower Laboratory. Give 1 c.c. of the solution hypodermically daily until complete detoxication occurs. This usually requires three or four days.

In controlling convulsions, Miller and Martinez, of Pittsburgh, use intravenously 20 c.c. of liver extract, called heparmone, made by Eli Lilly and Company. This is given every fifteen to thirty minutes, depending on the drop in blood-pressure and the state of coma of the individual.

An almost specific agent for combating the causative toxin of eclampsia and the syndrome is found in magnesium sulphate. This can be given intramuscularly, but preferably intravenously. A well-advocated procedure is the intravenous injection of 10 c.c. of a 25% solution of magnesium sulphate. Others advocate the use of a 10% to 20% solution, and still others prefer the 2% solution, which is very nearly isotonic and therefore subject to all of the arguments for the use of isotonic solutions in intravenous therapy.

My colleague, Dr. W. S. Magill, has exactly determined the isotonic solution of magnesium sulphate, to be made up with 19.5 grams of the C.P. anhydrous salt in solution to the amount of 1000 c.c. at normal temperature and barometric pressure, and with a reaction of pH7. On theoretical grounds this isotonic solution should be used for intravenous work.

When this salt is to be injected intramuscularly, it may be given to a total amount of 3.5 to 4 grams at a dose and in a 10% to 50% solution, at the choice of the physician. The dose may be repeated every hour to a number which the gravity of the case determines. Convulsions usually cease after the first injection, which has no effect on the uterine contractions, the pulse, nor on the blood-pressure. There is a most favorable action on the comatose condition, which is attributed to the activity of this medication in reducing the cerebral edema, where an ion of magnesium at once replaces an ion of calcium, liberating the latter in the blood, bringing up the calcemia and thus provoking the subsidence of the convulsions that were caused by the preexistent hypocalcemia.

This treatment is ineffective in eclamptic convulsions with a complication of uremia.

Alton and Lincoln report the use of 1 c.c. of a 25% solution of this salt for every 25 pounds of body weight of patient, for intraspinal injections, and have used such therapy in four cases. After each such injection the convulsions ceased; the minimum time for their control was 18 hours. In all four cases the treatment controlled the convulsions, but one died from extreme toxemia in coma in which she was on entrance to the hospital. The other death was also from the extreme toxemia.

From the inception of this magnesium sulphate therapy, the fear of respiratory disturbance is often manifest. It is advisable to have ready at hand a 10-c.c. dose of 25% solution of calcium chloride for immediate intravenous injection to combat this dis-

turbance. In this connection, however, we find absolutely no recent mention of any such respiratory disturbance ever appearing. Dorset, for example, mentions the administration of as much as 100 c.c. of the solution (intramuscularly) to several patients within a period of 20 hours without respiratory disturbance of any kind.

To those most given to this therapy, the most striking manifestations of its use are the rapid disappearance of the edema and recovery from torpor and even from coma. Lazard states that, in over 500 intravenous injections of from 20 to 30 c.c. of a 10% solution of magnesium sulphate, he has never seen any untoward effect; such doses have no bad effect on the blood, and its continued use in an eclamptic patient of nephritic type resulted in marked diminution of blood sugar, creatinin and uric acid, synchronously with a clearing of the eclamptic state.

Apparently this magnesium medication is directed, and acts primarily, to liberate the ions of calcium to the blood stream, thus reducing the edema—a tissue dehydration action. Except for a possible slight analgesic effect to diminish the exaggerated irritability of the sympathetic nervous system, there would be no further efficient therapy derivable from such medication.

All good therapy aims to be fundamental, to reach and eradicate the first cause. In eclampsia we have already mentioned the strong base of endocrine imbalance and the use of thyroid and hepatic extracts have been described. We now recall that among the first evidence of our endocrine imbalance comes the failure and distress of the liver. Almost immediately appear the faulty metabolic processes, deranged non-protein nitrogen, insufficient alkali reserve, low CO_2 combining power, evidences of insufficiency of the liver and pancreas—defective utilization of carbohydrates. In face of such complications and in the present knowledge of the range of efficient use of insulin, it was but a step to resort to insulin therapy to restore a sufficient carbohydrate metabolism, to prevent all menace of acidosis, and by this route to combat the developing of or actually established eclampsia. We have now by such therapy what promises to be the most effective of all.

Thalheimer reports the elimination of established ketosis in 12 hours, and from many others come the reports of the inefficiency of insulin therapy to rapidly drop the blood-sugar level, increase the CO_2 combining power, as well as the rapid restoration of the patient from a condition of coma to one of well-being and safety. This therapy is indicated by all states of high blood-sugar, of insufficient CO_2 combining power, in all cases of coma or torpor following convulsions.

As soon as encountered, it is well to give to any patient with syndrome of eclampsia a first dose of 10 units—if manifestly severely menaced, as much as 25 units for this first dose—with an immediate determination of the blood-sugar from a specimen taken at the time. Care is to be taken in the consequent close watch of the patient to administer a protective dose of glucose at any moment of development of insulin excess. According to the severity of the case and under the control of successive blood-sugar determinations, with protective doses of glucose to the amount of 2 grams of glucose to each unit of insulin used; with injections of insulin night and morning the treatment is continued until the blood-sugar threshold is normal, the CO_2 combining power is increased to normal and maintained there while the patient recovers from any existing torpor or coma and is then out of danger.

A very useful temporary procedure is cited by Caldwell in initiating an effective therapy for eclampsia, which he has used in 47 cases; *i.e.*, as soon as the patient is reached and found in eclamptic state, an intravenous injection of 2 or 3 c.c. of paraldehyde has a startling effect in the majority of cases. There is immediate relaxation and passage to a natural sleep. The respiration becomes deeper and more regular, and cyanosis clears. The blood-pressure sometimes drops 15 to 20 mm. with resultant pulse full and regular and much slower. With such small dosage the resultant anesthetic action is short, but is quite sufficient for examination of the patient, for bleeding, or for immediate intravenous injection, without excitement and with a sure immobility of the body during such operation. This paraldehyde is not in any way curative, but it allows time and quiet for manipulations and for curative therapy to come to its effect.

A treatment which is used by Dr. W. D. Inglis, of Columbus, Ohio, and other leading obstetricians throughout the country, is one with which you are probably all familiar. It is known as the Stroogonoff treatment. The details follow:

First hour.—Morphine sulphate, gr. ¼, hypodermatically.

Second hour.—Chloral, gr. 30, per rectum.

Third hour.—Morphine sulphate, gr. ¼, hypodermatically.

Seventh hour.—Chloral, gr. 30, per rectum.

Thirteenth hour.—Chloral, gr. 25, per rectum.

Twenty-first hour.—Chloral, gr. 25, per rectum.

In addition to the above, Dr. Inglis uses glucose and magnesium sulphate intravenously in helping to control the convulsions. Fifty c.c. of a 50% solution of glucose are given intravenously as needed at two- or three-hour intervals. The dosage of magnesium sulphate is judged according to the condition of the patient.

Another treatment which is found very efficient and useful, especially for the general practitioner, is the use of veratrum viride. A reliable preparation is one made for hypodermic use by Lloyd Brothers of Cincinnati, Ohio, the trade name of which is subculoyd veratrum: Give 2 c.c., repeated every 30 minutes, until convulsions are controlled; then give often enough to keep the pulse in the seventies or below. The blood-pressure comes down with the pulse.

Conclusion.—The prompt detection and care of preëclampsia is very possible, imperative, and remarkably effective.

Radical measures are more deadly than conservative, and in the present effective therapy the termination of pregnancy is seldom to be countenanced, and requires most exacting and detailed justification that is very rarely possible.

It would seem that the best procedure, where eclampsia menaces, is the immediate administration of 2 c.c. of paraldehyde intravenously, after withdrawal of blood specimen for analysis, and 600 to 1000 c.c. of blood. This is allowed by administration of 10 units of insulin, and then guided by the results of the first blood-sugar determination and under the control of successive analyses. With protective doses of glucose—2 grams per unit of insulin used—to proceed with insulin injections night and morning in amounts indicated by the blood sugar until the blood-sugar threshold becomes staid and normal.

Where sufficient facilities for blood-sugar determinations are not available and the physician does not feel competent to use insulin under the possibility of glucose check of any overdose, the resort to magnesium sulphate, vertraum, or Strogonoff therapy may be advocated, as they are undoubtedly effective to the point of camparative safety.

In conclusion, allow me to again impress upon you these points:

First: Bleeding is the most immediately effective therapy we have for elimination of extremes of toxin, and is always safe. We beg to insist that every case of established toxemia be bled abundantly when first seen, for the safety of the patient, until time has been gained for the effect of other therapeutic measures.

Second: In view of the proven statistical results, both the indications for the mother and for the child forbid any interference with the pregnancy other than in most rare cases and for which justification must be exacted rigorously from the operator.

BIBLIOGRAPHY

A. C. Beck· Conservative Treatment of Eclampsia. *Am. Jour. of Obst. and Gyn.*, vol. 7, June, 1924, p. 677.

W. Gessner: Eclampsia Statistics in Baden, 1910-1922," etc. *Zentralblatt f. Gyn.*, vol. 48, Dec. 13, 1924, p. 2732.

W. B. Hendry: Toxemia Pregnancy. *Canadian Med. Jour.*, vol. 17, June, 1927, p. 7.

Levy-Solal, Dalsace, Grillet: Calcium, Phosphorus and pH of the Blood in Women in Preeclamptic Condition. *Comptes Rendus de la Soc. Biol. Paris*, vol. 96, March 18, 1927, p. 675.

Levy-Solal: Anaphylactic Type of Eclampsia. *Paris Medical*, vol. 63, June 18, 1927, p. 600.

W. E. Caldwell: Paraldehyde Intravenously in Eclampsia. *N. Y. State Jour. of Med.*, vol 26, Jan. 15, 1926.

W. Hulse: *Zentralylatt f. Gyn.*, vol. 48, May 31, 1924, p. 1179.

L. Dorsett: Intramuscular Injection of $MgSO_4$ for Control of Convulsions in Eclampsia. *Am. Jour. Obs. & Gyn.*, vol. 11, Feb., 1926, p. 227.

B. H. Alton and G. C. Lincoln: Control of Eclamptic Convulsions by Intraspinal Injections of Magnesium Sulphate. *Am. Jour. Obs. & Gyn.*, vol. 9, Feb., 1925, p. 167.

E. M. Lazard: *Am. Jour. Obs. & Gyn.*, vol. 9, Feb., 1925, p. 178.

R. D. Mussey: *Am. Jour. Obs. & Gyn.*, vol. 10, Dec., 1925, p. 826.

L. Mills: *Am. Jour. Obs. & Gyn.*, vol. 7, March, 1924, p. 304.

N. Louros: The Question of a Placenta Poison. *Zentralblatt f. Gyn.*, vol. 50, May 29, 1925, p. 1439.

R. Bund: *Zentralblatt f. Gyn.*, vol. 49, Dec. 19, 1925, p. 2879.

K. von Ottingen and B. Schwerer: *Zentralblatt f. Gyn.*, vol. 50. Nov. 19, 1926, p. 3009.

H. Knaus: Thyroid Function During Pregnancy. *Arch. f. Gynakol.*, vol. 123, Dec. 15, 1924, p. 26.

H. Hoffmann: *Arch. f. Gynakol.*, vol. 123, Dec. 15, 1924, p. 37.

F. W. Rice: *N. Y. State Jour. of Med.*, vol. 27, Jan., 1927, p. 1.

Louros and Schmechel: Experimental Studies of the Etiology of Eclampsia. *Arch. f. Gynakol.*, vol. 129, June 31, 1927, p. 1060.

Louros: *Arch. f. Gynakol.*, vol. 129, June 31, 1927, p. 1049.

E. M. Lazard: *Am. Jour. Obs. & Gyn.*, vol. 13, June, 1927, p. 720.

M. Oppenheimer: Jaundice in Eclampsia. *Monatschrift f. Geuburt. u. Gynak.*, vol. 64, Nov., 1923, p. 289.

E. Mathias and A. Pincsohn: *Monatschrift f. Geburt. u. Gynak.*, vol. 68, Feb., 1925, p. 229.

E. D. Plass and J. L. Bogert: Plasma Protein Variations in Pregnancy. *Johns Hopkins Hosp. Bull.*, vo. 35, Nov., 1924.

Salem and Al: *Revue Francaise de Gynecologie & Obst.*, vol. 19, Jan. 25, 1924, p. 39.

H. J. Stander and E. E. Duncan: Use of Insulin in Eclampsia. *Am. Jour. of Obs. & Gyn.*, vol. 10, Dec., 1925, p. 823.

H. J. Stander and A. H. Radelet: Blood Chemistry in Eclampsia. *Johns Hopkins Hosp. Bull.*, vol. 38, June, 1926, p. 423.

E. Persson: *Acta Obst. & Gyn. Scandinavica*, vol. 5, 1926, p. 230.

H. A. Stephenson: *Calif. & Western Med.*, vol. 24, April, 1926, p. 484.

B. Stroganoff: *Am. Jour. Obst. & Gyn.*, vol. 11, June, 1926, p. 756.

Stroganoff-Muenchener: *Med. Woch.*, vol. 71, April 4, 1924, p. 436.

Schwartkopf: Eclampsia in Mother and Child. *Zentralblatt f. Gyn.*, vol. 51, March 26, 1927, p. 783.

I. Teiber: *Monatschr. f. Geburt. & Gynak.*, vol. 68, Feb., 1925, p. 240.

F. Volhard: Eclampsia and Spastic Uremia. *Monatschr. f. Geb. & Gyn.*, vol. 66, May, 1924, p. 79.

W. Thalheimer: *Am. Jour. Obst. & Gun.*, vol. 12, Sept., 1926, p. 369.

J. Wieloch: *Zentralblatt f. Gyn.*, vol. 48, April 26, 1924, p. 898.

J. Wieloch: *Arch. f. Gyn.*, vol. 123, March 14, 1925, p. 337.

K. M. Wilson: *Am. Jour. Obst. & Gyn.*, vol. 9, Feb., 1925, p. 189.
E. B. Whitmore: *China Med. Jour.*, vol. 41, Feb., 1927, p. 125.
W. Stoeckel: *Zentralblatt f. Gyn.*, vol. 51, Jan. 15, 1927, p. 141.
J. L. Wodon: *Bruxells Medicale*, vol. 7, Dec. 5, 1926, p. 217.
J. L. Wodon: *Revue Francaise de Gyn. et Obst.*, vol. 22, Feb., 1927, p. 92.
C. H. Maxwell: *A Thousand Babies.*
S. J. Goodman: *Recent Progress in Obstetrics.*
G. P. Shears: *Obstetrics—Normal and Operative*, p. 263.
Miller and Martinez: *Amer. Jour. Obst. & Gyn.*, vol. 14, August, 1927, p. 166.

THE EARLY RECOGNITION OF SOME COMMON UROLOGIC CONDITIONS *

By DORSEY BRANNAN, M.D.
Morgantown, W. Va.

The vast majority of patients of all types first consult the family physician for diagnosis and treatment. The burden of recognition of special and difficult cases is, therefore, in the province of the general practitioner. Unfortunately, in the past, too little attention has been directed toward educating the students in clinical medicine in regard to many of the special problems. Surgery is no exception in this respect, and major urologic conditions are often largely neglected and overlooked because of their obscure nature. It is in this particular field—namely, urology—that I desire to discuss with you a few of the early symptoms and physical findings of the more important lesions.

In urology, which is only a part of surgery in general, we have to deal with various diseases of the urinary tract in the female and the urinary and generative organs of the male. The ailments range all the way from those as simple as herpes progenitalis to the most destructive infections and most malignant tumors. On the other hand, there is no field in surgery where the results are better, provided the correct diagnosis is made and the proper treatment instituted. In a large number of cases, operative surgery is not indicated, but surgical principles are nevertheless involved.

Many of these patients present themselves with symptoms referable to the bladder and complain of frequency of urination and burning. Most practitioners with whom I am acquainted conclude that such a patient must have cystitis, because of the vesical irritation. The reasoning is probably correct in many instances, while in other cases the lesion is more deeply seated. It is to this latter group that I wish to call your particular attention.

Cystitis, alone, is seldom a primary disease, except when dealing with the induced vesical inflammation following catheterization or instrumentation. In other words, cystitis, in the absence of residual urine or a foreign body, is an unimportant disease and generally responds to proper treatment. When we have the evidence of a cystitis which does not respond to treatment, we should consider the other possible causes. Is there a vesical calculus, obstruction at the vesical office or below, or perhaps an inflammatory lesion in the upper urinary tract? Very often the first indication in renal tuberculosis is evidence of a cystitis which may appear rather suddenly or, more often, insidiously. In certain other extensive renal infections there may be no pain or discomfort in either flank until the lesion is far advanced. By way of illustration I recall a patient who was referred by his family physician to the urological clinic because of a persistent "cystitis and gonorrhea." The patient was admitted to the hospital over the objection of the resident surgeon, who regarded him as a case of simple "cystitis." Cystoscopic examination revealed a large pyonephrosis and pyoureter which necessitated two or three major operations for the complete eradication of the disease. This man had lost no appreciable weight, had suffered no fever, and did not have pain. His only symptoms were those of a cystitis.

Again, I recall the case of a girl who had a pelvic inflammatory disease. The gynecological staff paid little attention to the complaints of frequency and burning. Upon examination it was found that she had an infected urine and a large, painful mass in the position of one kidney. She proved to have a large pyonephrosis which was far more important to remove than the infected tubes. The gonococcus was the organism recovered from both lesions.

Coming to the question of renal tuberculosis, as stated, this disease very often shows itself by symptoms referable to the urinary bladder. Just what does that indicate? It means the disease may have descended down the ureter and involved the bladder at the ureteral orifice, and indeed this is very common in cases of long standing. Primary tuberculosis of the urinary bladder, on the other hand, is a very rare disease. In chronic infections of the upper urinary tract, in the absence of pyogenic organisms, tuberculosis is generally the correct diagnosis; yet it must be proven.

A large hydronephrosis may first give vesical symptoms. At times the first symptoms of renal calculi are those of a cystitis. In certain cases of renal calculi there is no infection, and ordinary urinalysis is negative. Before leaving the subject of

* Presented before the Surgical Section of the West Virginia State Medical Association at Martinsburg on May 22, 1929.

cystitis, one should refer to those rather uncommon cases of interstitial cystitis. Here the vesical symptoms are exceedingly severe and chronic, and the urine may show very little aside from a few leucocytes and scattered red blood cells. This entity is not always easy to diagnose, but surgical treatment gives relief.

There is also a fairly common lesion of the vesical orifice in women, especially those who have borne children. They complain of frequency and burning, and yet there is very little in the urine. On cystoscopic examination one may find a reddened urethra and trigone, often with numerous polypi floating in the fluid and attached to the vesical orifice. In these cases local treatment may clear up the condition.

A great deal has been written about the common acute infections of the upper urinary tract, pyelitis in particular. The symptomatology in these cases is quite variable. I think there is a question as to whether or not certain of the so-called pyelitis cases are really pyelitis or instances of a deeper seated parenchymatous involvement. Hunner believes they are dependent upon a stricture of the ureter, but many others have a different point of view. The patients first complain of frequency, burning, and a turbid urine. On the other hand, there may be localized pain in the region of the kidneys and pain along the ureters. In any instance there may be high fever and chills, particularly at the outset, and such may be the outstanding features. Other cases may be afebrile. Tenderness or pain about the kidneys is generally elicited, although it may be slight. These patients are frequently distended and are often nauseated and may vomit. In some, the clinical picture may be one of extreme prostration. The urine generally shows gross infection and there may be hematuria, but occasionally the urinalysis at the onset is inconclusive or negative. I recall the case of a young girl, about twelve years of age, who was sent into the hospital because of acute abdominal symptoms. She presented abdominal distention, a high fever, tachycardia, leucocytosis, and a negative urine. She was also nauseated. Repeated physical examinations and urinalyses by competent men did not elicit the cause of her illness. On the third or fourth day, a few white blood cells were found in the urine, as well as many bacilli, which later proved to be Friedländer bacilli. Was this a case of pyelitis?

Great care should be exercised in trying to eradicate acute infections of the urinary tract, because they often beuome chronic and then they become exceedingly difficult to deal with. I have a patient now under observation who refuses further vigorous treatment because it has repeatedly failed to give relief. The infection in this instance has been present about twenty years. Such instances, indeed, are not rare.

There is also much evidence at present to indicate that focal infections elsewhere in the body may be the source of the infection in the urinary tract. The urologist is more and more inquiring into the status of the common sites of these possible infections. A general infection may also be the cause of a pyelitis. For example, a young woman of nineteen years consulted me this month because of pain in the region of the right kidney, frequency, and burning. She proved to have an infection of the upper urinary tract on the right side, associated with hematuria. The renal infection immediately followed a severe "influenza" in this instance. Pyemia with localizations in the kidneys is well known, and even a small abscess on the skin may be the focus of a surgical infection of a kidney.

Bleeding from the urinary tract is an exceedingly common symptom. Hematuria may occur in cases of acute cystitis, and I have recently treated such a case. It may even be abundant in such cases—enough to color the urine red. In most surgical conditions hematuria is an indication of a graver lesion.

Perhaps the most obvious symptom of neoplasms of the bladder, ureter or kidney is bleeding. Hemorrhage from such lesions may very often be exsanguinating, particularly when dealing with malignant tumors of the bladder. Calculi commonly give rise to hematuria, and in the presence of pain the diagnosis is almost certain. Again, hematuria is a common symptom of tuberculosis of the kidney, and this may be the initial and outstanding symptom. This is well illustrated in the case of a young man upon whom I operated. During the cystoscopy one could see a highly colored, red urine spurting from the diseased ureter, while clear urine issued from the healthy ureter. The infection had not yet progressed sufficiently to give vesical symptoms, and it was because of the bleeding that the patient sought relief.

Idiopathic or essential hematuria is simply an expression for an otherwise undiagnosed case of bleeding from the upper urinary tract. The whole idea of essential hematuria should be discarded and the patients followed until a correct diagnosis is established. It should be clearly kept in mind that by far the most common cause of slight hematuria

is the ubiquitous disease, nephritis, in one form or another.

In any case with persistent microscopic hematuria, in the absence of evidence of chronic nephritis, one is justified in performing a diagnostic cystoscopy, and all cases showing gross blood in the urine should be similarly treated. It is in just such early cases that one may be able to diagnose the disease correctly and perhaps eradicate it altogether.

Pain occupies an important place in the symptomatology of many urological diseases. Pain, however, may be very misleading in this field of medicine, as it is elsewhere. Pain alone, then, should make one cautious. The classical pain of renal colic caused by spasmodic contracture of the renal pelvis and ureter, which passes downward into the bladder, urethra, genitalia, or along the thigh, is well known and requires no comment. The same is true of the associated symptoms, such as prostration, sweating, nausea, vomiting, etc., and even retention of urine. Such pain is due, we believe, to the passage or attempted passage downward of some foreign body which may range all the way from a small blood-clot to a calculus. The foreign body may not pass, and, if not, it is in a good position to set up another attack of colic. Acute and intermittent angulation of the ureter and stricture may also be a cause of colic. Hypersensitiveness of the testicle, when present in cases with less classical renal pain, is of significance and may be a helpful sign.

The chronic aching pain which occurs in the side is a fruitful source of confusion. In cases with recurrent pain in the right side without fever, think of the appendix last and you will be more often correct. Always examine, carefully and repeatedly, the urine in these cases. At the same time, do not overlook any orthopedic condition of the spine. Just a few weeks ago I operated on a young woman for renal calculus, upon whom one of my less cautious colleagues had performed a pelvic operation some time previously for the same pain. Urological conditions, then, may give recurrent or aching pains in the back, flank, and pelvis, and pathology of the upper urinary tract should be excluded in such cases, especially if the urine shows infection.

In women with lower abdominal pain localized to one or both sides, one should always go very carefully into the gynecological condition before concluding that the lesion may be in the urinary tract. Do not conclude that a patient has a ureteral stricture before the spine and pelvis have been examined. The spine is perhaps more often neglected in the course of a routine physical examination than is the urinary tract. In my opinion, the frequent diagnosis of ureteral stricture belongs in the same class with that of chronic appendicitis—a greatly overworked condition.

Pain elicited about the kidneys, ureters or bladder is always significant and requires careful observation even in the absence of changes in the urine.

There is yet another atypical group of patients with renal calculi which may present themselves with symptoms referable to the stomach and intestines. You will recall that there is a close association of the autonomic nervous system of both gastrointestinal tract and kidneys. This may perhaps explain the symptomatology. The patients in question are likely to complain of distention, belching, and vague indigestion. They may vomit. The pain is generally localized and it may be severe. Here, again, the careful examination of the urine may tell the tale. One can readily understand how the busy practitioner can overlook the seat of the trouble by treating such a patient purely as a gastric case. I know of such an instance, where the patient was allowed to suffer five years from a renal calculus before the correct diagnosis was established and necessary operation performed.

It is always exceedingly important to make a bimanual examination of the kidneys as a routine procedure. If enlargement exists, one can generally detect it. Tenderness in the castovertebral angle is a significant sign. An enlarged kidney in a child usually means a neoplasm, most of which are very malignant. An uninfected hydronephrosis may first present itself as localized and aching and palpable enlargement in the region of the kidney, and this type of case is not at all rare. In congenital cystic disease of the kidneys, both organs are enlarged and irregular and the liver very often is enlarged, due to multiple cysts.

Turning now to the generative tract in men, one encounters various other pathological changes In men, a history of gonorrhea may be important. Be suspicious of an infected prostate gland and seminal vesicals in a young or middle-aged man who comes complaining of pain in the perineum or sacral region, or both. On the other hand, strange as it may seem, a large number of patients with a post-gonorrheal infection of the prostate and vesicals have relatively little or no pain. Abscess of the prostate causes severe pain in the perineum, rectum, and sacral region. The patient may also be unable to void. Carcinoma and other malignant diseases of the pros-

tate gland may give rise to pain very late in the disease, and such pain may be the first sign of impending death. The same may be said of malignant growths of the urinary bladder, which are totally hopeless diseases unless diagnosed and treated early.

A painless and progressive swelling in one testicle is generally regarded as a hydrocele unless considerable care is taken. Unfortunately, one of the most malignant groups of tumors with which we have to deal is that of the testicle, and its onset is not unlike that of a hydrocele—namely, a gradually increasing and often painless swelling. Fluid is usually a part of the swelling in the tumor cases, and in transillumination the presence of the fluid is misleading. The testis proper is posterior in a hydrocele, and a portion of the epididymis can be palpated outside the sac. There is also an apparent shortening of the penis in a hydrocele. Any variation from these findings, with thickening of the cord or changes in the inguinal glands, should at once arouse our suspicious regarding a new growth. Delay in testicular neoplasms spells death, while early treatment may be life-saving. The atrophic testicle, which generally follows an orchitis of mumps, should be removed because they are common sites for the origin of malignant tumors. Some of these atrophic testicles are also very painful and extirpation is the only relief. The undescended gonad which can not be brought down into the scrotum should be removed, as they are also a frequent site for malignant tumors.

Tuberculosis of the seminal tract is a fairly common disease, but almost always overlooked because of its insidious onset. When both epididymes are chronically enlarged, irregular and painful in the presence of inflammation of each vas, seminal vesicals, and the prostate, the lesion is generally tuberculous. After the sinus forms there can be no mistake. Before leaving this topic, it may be said that the repeated tapping of hydroceles is an exceedingly poor and unsurgical practice. One is very apt to introduce infection if the practice is continued, and the sac may become thickened and the function of the testicles impaired to a more or less degree. It also makes an otherwise simple operation a difficult one. The injection of irritating substances can no longer be tolerated.

Carcinoma of the penis should be a disease with a higher percentage of cures. Unfortunately, because of delay in making the diagnosis, and the ill-advised and repeated applications of ointments, the disease is encouraged and given time to spread. Carcinoma of the penis should always be excluded when one is confronted with a chronic ulceration either superficial or deep. It may occur in persons of 35 years, or, in other words, in young men. A biopsy will almost always decide the matter.

It may be well to take this opportunity to refer to certain congenital lesions of the urinary tract. Many of these are obvious, but there is one type of case akin to the old prostatics which deserves special mention. At times there is a valvelike formation in the posterior urethra of little boys. The urinary bladder becomes chronically dilated, as well as the ureters and renal pelves. These children pass only small amounts of urine, while the renal function becomes gradually impaired. Generally, one of the first things that happens, as soon as the attending doctor discovers the condition, is to pass a catheter and infect the child. The clinical picture is then one with an acutely ill child with chronic retention, low renal function, cystitis, and pyelitis which often goes over into pyelonephritis and death. The hope of recovery in these little patients lies in the gradual decompression of the distended urinary tract under aseptic precaution, to be followed later by the necessary operative procedure.

During infancy and childhood one may encounter a variety of more or less obscure lesions of the urinary tract. Calculi and infections perhaps head the list, while congenital anomalies, such as were just mentioned, are common. The important feature is to keep in mind that the child should have a thorough urological investigation when indicated. The indications are not different from those in adults, and of course this presupposes an examination of the baby's urine. The child is anesthetized and the instrument is passed into the bladder, which is then explored and catheters are introduced into the ureters exactly as with adults. The anesthetic is then withdrawn and the functional tests and necessary x-ray examinations are made. The little patients tolerate such manipulation exceptionally well. There is an ever-increasing number of cases of this sort appearing in literature.

We may discuss the very common condition of obstruction at the vesical orifice from an enlarged prostate. All of you are acquainted with this lesion in old men and with the chain of symptoms, physical findings, and the ultimate result. Prostatic obstruction is purely a surgical disease, and this is the only intelligent answer we can give to the practitioner who inquires regarding the management of these patients. They should be referred for operation as soon as the condition is discovered and before uremia

develops. It should be emphasized that these old men present a very special and usually difficult problem which should require the best of skill and experience. These men are almost invariable more or less senile, with thickened vessels, often with a hypertension and a certain amount of renal and cardiac damage. Diabetes and chronic anemia are frequent complications, as well as a variety of other conditions. These people, therefore, are always a poor operative risk. For example, a man of 71 was recently referred to me because of an enlarged prostate. He was uremic and desiccated. The hemoglobin was 45%. The urethra had false passages from the repeated use of a metal catheter, and it was impossible to pass a catheter. The urine was thick and foul. Such, then, were the complications in this case, which is in no way unusual. Hence the plea for early surgical treatment. I, personally, know of instances where old men have been treated by prostatic massage and irrigations for an elarged prostate, all of which is inexcusable at the present time.

At this point it may be well to consider the question of catheterization for a moment in regard to early urologic lesions. A catheter, when improperly used, is an invention of the devil! Catheterization is a dangerous procedure—yet how often it is done with little or no regard for sterility! One can not completely cleanse the urethra and the anterior portion of the urethra may contain pathologic bacteria, the colon bacillus in particular. Every one agrees that it may be necessary to catheterize following certain abdominal operations, particularly pelvic operations in women. In these instances the bladder should not be allowed to become overdistended and the patient should be encouraged to void. Some will do so. Always instill a good antiseptic following catheterization, but keep in mind that this will not always prevent cystitis if catheterization is repeated over and over again. In cases with paralysis of the bladder and rectum secondary to a lesion of the spinal cord, one should never practice interval catheterization, because severe infections and, ultimately, death will almost invariably follow.

Again, the doctor should never completely drain the greatly distended bladder in the acute retention cases of prostatism. If you will recall the pathology, you know that these old men have been carrying about a residual urine for months and, more often, for years. The bladder has become hypertrophied because of the increased work and it has accustomed itself to the increased intravesical pressure. The ideal method of treating such a condition is to insert a retention catheter and gradually lower the tension under aseptic precautions. This can not be done in the home, and the majority of these old men will not go first to the hospital. Do not then remove more than a third or a half of the urine, and leave a good quantity of antiseptic to mix with the residual urine. The patient will then be in a better frame of mind to be told about the necessary surgical treatment, which should be insisted upon. Repeated catheterization in these cases simply means adding a repeated seeding of bacteria to the bladder. In a fair number of these cases one can induce voiding by giving a hot sitz bath, hot enema, etc. These simple measures should be tried first, before resorting to catheterization. Catheterization day after day in any case of obstruction or retention is simply adding to the already inevitable and progressively downward course.

In regard to the all-important urinalysis a few remarks may be of value. A clean specimen of freshly voided urine is always preferred. In collecting the fresh specimen in women, it is often necessary to cleanse the genitalia carefully before voiding, but this will not always keep out extraneous material, especially if there is leucorrhea. Catheterization may therefore be necessary, and should be performed when a clean specimen can not otherwise be obtained. In men we can secure a clean specimen with less trouble. Of the important features in a routine urinalysis, the microscopic examination and the stained sediments are perhaps first. Stains for the tubercle bacilli are too often omitted, and one or several negative specimens does not always exclude tuberculosis. Guinea-pig inoculation may be necessary.

There are a host of other major urologic conditions to which one could call attention, but the early symptomatology does not differ a great deal from that already mentioned. Early diagnosis should be our aim. Suffice it to say that any individual with symptoms of a cystitis, which can not be explained and which does not clear up promptly under ordinary measures, should be investigated with the cystoscope. All those with pain in the bladder, renal colic, hematuria (either gross or microscopic) with signs of obstruction, chronically infected urine, etc., should have the advantage of a urologic investigation. This may involve an elaborate cystoscopic procedure with pyelo-uretergrams, and in addition it may include a study of certain phases of the metabolism before one can determine the exact status of the anatomical and functional pathology. On the other hand, a very

simple examination may suffice. It is only in this way that early diagnosis can be established and proper treatment instituted. These principles apply to children as well as to adults.

Discussion

DR. BRANNAN: In view of the symposium on industrial surgery, I will ask the men if they will give their ideas or experience in treating these cases of paralysis of the bladder following traumatic injuries of the spine or tumors or what not. Such lesions are very common in this part of the country. I would like to have some discussion on that point.

DR. G. G. IRWIN (Charleston): Dr. Brannan's paper covers so much ground that it would be impossible to fully discuss it in the allotted five minutes. There are, however, several points in the paper that might be advantageously noted and emphasized.

It has been noted several times during this meeting that the urinary tract is overlooked during a general physical examination. This is too often the case. Symptoms of urinary tract disease, apart from pain, may not be very insistent, but may still denote a very grave condition. Abnormalities of the urinary tract and abnormalities of the urinary contents, especially when occurring together, probably mean disease of the urinary tract. In particular, hematuria is a red light on the path of life, and the fact that it is sometimes painless does not lessen its significance.

Dr. Brannan touched on early diagnosis. You men doing general practice would not think it fair to be called upon to pass on a suspicious chest from what you find in one examination. The urologist is in a similar position when he has to do with an early condition. Several examinations may be necessary before the truth can be run to earth.

I want to emphasize what Dr. Brannan says relative to the significance of cystitis. A simple cystitis clears up under almost any kind of treatment within two weeks. If it does not, the trouble is something other than cystitis. The patient with a chronic appendicitis, gallbladder disease, and various other gastrointestinal disorders often seeks medical advice for "indigestion." Just so does the patient with so many various lesions of the bladder and kidney come seeking relief from "cystitis."

The doctor says that the catheter is the instrument of the devil. Perhaps it sometimes is. I am inclined to think, however, that in the so-called catheter cystitis the method of use is at fault rather than the catheter itself. I am referring now to the cases that develop after postoperative catheterization. These patients are unable to void and are catheterized until they begin urination, when catheterization is stopped. Since the bladder at first is unable to completely empty itself, there is some residual urine —and in this, rather than because of the catheterization itself, lies the cause of catheter cystitis. I would suggest that these cases be catheterized immediately after urination as long as there is any residual urine. This is the suggestion of an obstetrician—Curtis, of Chicago—and is well worth the attention of the obstetrician as well as of the surgeon.

Finally, temperature, gastrointestinal upsets and pus in the urine do not always mean that the infant or child has pyelitis. It is well established that infants and children are subject to as wide a range of urologic disease as adults. There is the same or more imperative need of exact diagnosis and treatment. Thanks to the efforts of the instrument makers and general anesthesia, cystoscopy can now be done on the patient of any age.

DR. E. BENNETTE HENSON (Charleston): I did not expect the request to discuss the traumatic phase of the bladder that Dr. Brannan mentioned at this time in the symposium, but, since the discussion has started, I will mention the question of fractured spine with distended bladder. For a good while this gave us all quite a bit of trouble. We always got infections when we used the catheter. We started the suprapubic drainage and these bladders also became infected. Then it occurred to us that recent investigations disclosed that the normal bladder would not burst on overdistention. We started then to let the bladder become distended and tried to use the Crede method of expressing the urine. In the last four years we have treated quite a number of cases this way, and at no time has the bladder become infected. Just recently I sent a man home to die with a fracture of the first lumbar vertebræ. (I thought he had a complete cord severance.) His doctor told me that, four months after I sent him home, he was walking around, had complete control of his bladder, and at the last examination not more than five pus cells were found to the field. So I feel, if that man got by with the bladder completely non-infected, with the kidneys normal and normal urine, that there evidently is some reason to doubt the judgment of these men who insist that the bladder should be catheterized, or, if not catheterized, to have suprapubic drainage. I have made several inquiries, and, as far as I can find out, most of the men doing traumatic work are using suprapubic drainage. It was not satisfactory in my hands.

DR. W. S. FULTON (Wheeling): I am a great admirer of urology and urologists, and I think they have been a help and benefit to all of us who are doing general surgery. I feel that I would not be doing my whole duty, when the subject of urology in relation to general surgery is brought up, if I do not express this appreciation. When we think of the complicated symptomatology in disease of the right side of the abdomen, and those of us who went through that period of guesswork before this symptom complex was unraveled by our urologists, we thank them for this greater protection.

I made an analysis of 100 cases of stricture of the ureter that came into the clinic for study and diagnosis, and I did not find a single patient beyond 25 years of age, who was proven to have had a stricture of the ureter, who did not have the appendix removed. I feel like bringing that up every time the question of urology comes up, because I feel that the young surgeon, and every man who is doing surgery, practically the first thing he had done in his career was to remove the appendix. There is no excuse for a surgeon removing a chronic or inflammable appendix without a urological study, unless he has a clear-cut history of appendicitis—and that can only be brought out by a careful, painstaking history. Of course, when we have an emergency with true symptoms of appendicitis, which we can all recognize, that is a different picture; but when the patient comes into your office with this dull pain in his side and with the history of that pain having persisted for a year or more, then, before you tell this man that he has a chronic appendix, investigate the urological tract. The patient goes to the doctor in whom he has the greatest confidence. That is usually his family doctor, and the family doctors at the present time do not do surgery; but he is the man in whom the patient is willing to trust his fate. When this appendix is removed and he is treated with two or three weeks' rest in a hospital he is perfectly comfortable, but then later comes out, goes to the doctor, and says, "Doctor, I have the same pain that I had before I was operated."

We have all done the same thing, saying, "It will take you a year to get over that operation," jolly him along, carry him along, possibly for two years. This man is gradually getting away from the doctor and he is going to the osteopath and the chiropractor and finally comes back into the hands of the urologist, who makes a diagnosis of stricture of the ureter, passes the catheter two or three times, and he is relieved. Naturally, he has lost confidence in the doctor and his faith has been very seriously interfered with, as far as the patient is concerned.

So the only thought I feel like trying to impress upon every one, whenever this question comes up, is the feeling that when a patient with right-side pain consults you, if it is not an emergency case, investigate thoroughly the urinary tract, so that surgery will not get the black eye that it has gotten in the years gone by.

DR. R. H. WALKER (Charleston): I wish to call your attention to the industrial branch of urology. We are far behind in this phase of the subject. It is largely because that in the majority of injuries a urologist has not been called into consultation.

There has not been, to my knowledge, a paper written on the subject of industrial urology. The time is opportune for a wideawake urologist to make a careful study of this subject.

I have been connected with the state compensation department for several years, and hardly a week passes that some poor laboring man does not come to the department, suffering from a neglected urological condition, such as a suprapubic fistula, a perineal fistula, or both, in conjunction with an almost impassible ureteral stricture. Upon investigation I have found that a large majority of these claimants come from the general surgeon, and seldom if ever has there been a urologist consulted.

Let us do better work as general surgeons, and help these unfortunates by referring them to a urologist. This may not always be possible in emergencies or recent injuries, but there is no excuse for not calling a urologist during the rehabilitation period of the treatment. If this was done an untold amount of suffering, and many permanent disabilities, would be prevented.

DR. A. P. BUTT (Elkins): Dr. Brannan has covered a very large field. I don't see as many general practitioners here as I would wish; perhaps if they attended our meetings, and we theirs, much good might come. We get many slams and we might give some.

In regard to urinalysis, it seems to me there is more bunk connected with the ordinary urinalysis than any other medical procedure I know of. A single specimen of urine is examined; no albumen and no sugar found. "Kidneys all right" is the verdict. Catheterization deserves much more importance than is usually accorded it. When filling in your card you come to the question, "How long have you been sick?" How often do you receive this answer, "Doctor, I have been sick ever since I was

in the hospital"? Then I always ask, "Were you catheterized?" If the answer is "Yes," I think I know the answer.

In my hospital, catheterization is always done by two nurses—never by one. Every step is rigidly marked out. The entire procedure is done without touching the catheter with the hand.

I am surprised at the number of physicians who are opposed to operations of any kind. Only yesterday I got a letter from a physician, asking where he could send his brother-in-law for electrical treatment for hypertrophy of the prostate; if electrical treatment would do him no good, how about x-ray or radium? He closed by saying that his patients who had been operated had not had good results. I recollected that I had operated one of his patients some ten years ago, and that the wound had not healed. However, the old man was nearly one hundred years old and received much relief. I wrote him a long letter, giving him names of patients who had received good results, but I suspect it will not avail to keep this man out of the hands of some electrical quack.

Some one, today, took a slam at the general surgeon who removes innocent appendices—if there are any innocent ones. All of us remove the appendix at times unnecessarily, but I don't think I have had as many as a half-dozen who returned saying "I am just like I was before." Now, Mr. Urologist, is it not a fact that about ninety per cent of the cases of gonorrhea you have treated were not benefited at all? Won't the average case get along just as well without you as with you? I know of few, if any, persons who have had tonsils or appendices out who wish they were back.

Dr. Irwin said something of the time consumed. It has seemed to me that only the very rich or the very poor should have troubles necessitating treatment by the urologist. These two classes seem to have time. The average middle-class person doesn't have the time necessary for urological treatment. It takes so long to properly treat them, and they do not have time or patience to go about it right. Certainly, it is no field for the lazy man.

I have been much impressed, as I grow older, with the apparent (please note the word *apparent*) harmlessness of hematuria. Certainly, I see men on the street, apparently in good health, who had blood passing from the urethra many years ago.

ECONOMICS *

By H. V. KING, M.D.
Morgantown, W. Va.

I was led to undertake this paper through a discussion which we had informally at the organization of the Monongahela Valley Eye, Ear, Nose and Throat Academy, in regard to the workings of the compensation law and financial considerations in general.

As I studied the subject of our own special economics and began the preparation of the paper, I found myself actuated by several motives: First, the desire to discover whether the conditions which confront me in the specialty are general and not a product of my imagination. Second, to sound sentiment regarding the operation of the state compensation law, as it bears on us, and, if possible, secure some action which might eliminate the disasters now a natural sequence of its misapplication. Third, to instill the idea that, although a branch of the general profession, we are, in effect, a branch so modified and so different in our contacts with our clientele that special business practices have sprung up. In some instances these should be discontinued; in others, encouraged and even insisted upon. Fourth, the wish to give to each and every member of this section the will and backbone to charge a sufficient fee.

In working out these objectives, it occurred to me that a questionnaire covering some phases would be of aid. Accordingly, a questionnaire was prepared and sent to about thirty-five specialists in all parts of the state. Twenty replies were had, and some suggestions. I believe the purposes of this paper will be best reached by following the outline provided by the questions.

The first question was:

Is it right for the State Compensation Commission to certify for payment the bills of general men and general surgeons presented for special services?

All answered the first query "No," except two who misunderstood it. At present the commissioner is obliged to certify the bill of any regular physician, but legal obligations and moral right are not always the same.

I have seen many instances where failure to diagnose a foreign body in the eye has led to long periods of disability, and others in which incomplete removal of a foreign body or improper after-treatment was

* Read before the Eye, Ear, Nose and Throat Section of the West Virginia State Medical Association at Martinsburg on May 22, 1929.

followed by extreme reactions and, in some cases, by the loss of the eye.

My experiences in this field lead me to state that where a specialist is available workmen should have the advantage of his special treatment in every wound and foreign body of the cornea. Let me illustrate by a case:

A coal miner, aged 42, employed by one of our Scott's Run companies, was injured by being struck in the eyes while at work. He saw his company physician the next day and was given some medicine to put in the eye and was told to go to work. The company doctor did not see him again for two days, at which time the eye was worse; but he was told it would be all right. At the end of six days he reported to me with a hypopyon ulcer of the cornea, occupying the entire center.

After a stormy period covering three weeks, with treatment including a paracentesis of the cornea, healing started and was completed, but with entire loss of useful vision. This patient, like several others I could quote from my own practice, lost his eye because the first aid was wrong or incomplete.

Similar cases could no doubt be duplicated by most of you. The situation presented is one which should be remedied by change in the law or by change in the commissioner's rulings. If these fail, our local subscribers to the compensation fund should be appealed to on the ground of their plain duty, and also that of their evident self-interest.

The second question on the list was:

Do you think that we should work more cheaply for corporations than we do in our private practice?

This question drew a unanimous "No." Where all are agreed, it should be easy to formulate a policy.

The fees charged by us in compensation work should follow closely those of our private practice. What right, I ask you, has the State of West Virginia to ask us to charge less for our services when rendered through a state-operated institution? Do they expect it of the road contractor, of the printer, of the teachers, lawyers, and other professional men they must employ? Certainly not! Then why should they expect it of us who have devoted years of our lives to attaining special training and skill?

Some of the fees are fair enough, but others are ridiculous. I think something should be done, and this is the body to start it.

The third question concerned the practice of hospitals all over the state in allowing men, general surgeons and men in general practice, to perform special operations and treat special cases.

Answers to the third question indicated that the hospitals of the northern part of the state were indifferent to or encouraged general men in undertaking special work, but that in the southern cities conditions were better.

The attitude of general hospitals in this connection is unfair to us and against the public interest. You may go into them at all times and find all sorts of special cases attended by general surgeons and men in general practice.

One respondent said there was no more reason for the abdominal surgeon doing tonsillectomies than there was for the throat surgeon doing appendectomies. Really, I wonder what the hospital authorities would say if one of us should call up some morning and schedule an appendecomy or a gall-bladder operation for the morrow!

Questions 5 to 9, inclusive, concerned the fees charged by us in private practice. As was to be expected, I found some men charging too little for certain work. Others charged plenty, but I do not think a doctor's bill is often too much.

Of course, this is my opinion; but I think perhaps you will agree with me when I read you some of the answers.

My idea was that we ought to value our services fully, and not as was revealed in an item from *Tonics and Sedatives*. The prize list for a small town fair was given, and for the best pumpkin pie Dr. Hokum was quoted as having offered an adenoid operation or fifty cents in cash. I am sure none of us have such a marked inferiority complex.

Number 5 was the fee for tonsillectomy. This varied from $45 to $75, including everything. The prices ran slightly higher in the southern counties, and it is customary among most men to charge $5 or $10 less for children. In these fees we all realize that each case must be decided on its own merits. However, we should depart from our standard fee in an upward direction as well as downward.

Number 6 asked about the different maxillary operations. Radical antra, from $5 to $150. Let me say that this is a major operation and should not be done for less than $100 to $150. The simple intra-nasal operation is quoted at from $5 to $75. Of course, the minimum quoted is not enough. Twenty-five to fifty dollars, and charge for after-treatments, seems fair enough.

The next question regarded some eye procedures. Advancement, $25 to $150. Most of these patients have no money, anyway, and come to our charity service. Chalazia, $5 to $25. I do not think any

one should do these for less than $10, and more as circumstances warrant. Mastoid, $50 to $250; mostly $100 to $150.

Then I asked the question, "What would you charge for a regular frame equipped with toric lenses, vision examination, and glasses complete?" The answers to this range from $12.50 to $20, with some of the men in larger centers prescribing only. Fifteen dollars seems to be a fair average.

Number 9.—Consultation, meaning office examination, was from $3 to $5; some charging more in cases where surgery is advised. Some men listed $10 as their answer, but I suspect most of them thought I meant professional consultation. Only a few charge retainer fees, and those not regularly.

My own practice (and I think it a good and fair one) is to charge, where surgical diagnosis and advice is given, a fee equal to ten per cent of the final charge. This is allowed on the final charge. Sometimes I am asked, "Well, what if I do not have you do the operation? Am I out my fee?" I reply by stating that, in that case, they have my advice, which is worth at least twice the amount I have charged them. Remember that a lawyer will not accept a case without a substantial retainer fee, that he charges in direct ratio to the amount of property or responsibility involved, and that his fees, in which only money, happiness or liberty are involved, are generally larger than ours, where health and life itself are at stake.

In question Number 4 I asked how long they kept the bill before they turned it over to some collection agency or did something with it.

The matter of collections may be properly taken up, now that we have rendered our bill. We should collect upward of 90 per cent. The answers ran all the way from "six months" to the pessimist who said, "Might as well let it go unpaid." He must have had some unpleasant experiences with collection agencies.

In Morgantown we have a credit association which reports to members on the financial rating of any applicant for credit, and which has a collection department. They issue a stamp reading, "As members of the —— Credit Bureau we are required to report all delinquent accounts." I use this where payment is slow, and if the notice is ignored I turn the account over in from 30 to 90 days, depending on circumstances. Local people are your best collectors. If you do not have an agency, encourage some young lawyer or business man to start one. It pays.

In making agreements with employees of corporations for installments to be checked off their pay, it is well to have a regular form. I have secured one of these and will be glad to furnish a copy to any one wishing it.

One of the problems we must face is the attitude of the general profession toward us. None of us, I believe, meddle in general treatment except in certain eye or ear conditions. Happily, some of the men in general practice are very good about referring cases, treating only the most trivial special ailments, such as conjunctivitis, tonsillitis, acute rhinitis, and the transient sinus infections seen in acute cases.

On the other hand, we have far too many general surgeons and practitioners who consider everything fish that comes to the net. Their only reason for turning over a case is not being able or willing to do the work required, or getting into straits in the course of a case.

I believe the day is past when the conferring of an M.D. degree and the serving of a general interneship gives a man a moral right to indulge to the limit in any and all forms of practice. His legal right stands as ever, and by most of our friends in the profession it is not abused. In one answer to my questionnaire the doctor stated that, if things were not changed, it would be necessary for specialists as a group to advertise their whereabouts and the sort of cases which should be handled by them. I am not so radical in my viewpoint, but there is food for thought.

A solution might lie in a frank presentation of our rights before our local societies. The right sort of man would not take offense, and the other sort should be given his rating and classification and given to understand that he is practicing crossroads medicine, unworthy of his calling.

In conclusion, permit me to say that I do not feel neglected, persecuted, or abused. I have many good friends in the general profession in Morgantown—men of the best type. You doubtless can say the same of your locality. Unfortunately, we also have in the profession those who can be identified without the aid of ring, bristle or grunt. That is too bad.

If, as a result of this paper, our section takes a definite stand on state compensation matters, if some brother has his spinal marrow reinforced, and if I have been interesting, even in a small way, I shall be thankfully content.

Discussion

DR. G. P. MORISON (Martinsburg): I am supposed to follow Dr. King with a paper, and he has

a lot of my "thunder" in his. He certainly has told the truth in lots of ways. We have the same condition here. I imagine everybody else has it to contend with—the general practitioner and general surgeon doing work that the specialist ought to be doing. The compensation commissioner turns us down lots of times when we send in a bill of $5 and awards us $2 or $3 instead. There is no recourse; you have to take it or send the check back. Lots of times we need the check. What are we going to do?

DR. W. T. BOOHER (Wellsburg): I think if this section does nothing more today than to take concerted action on this compensation situation, we will be well repaid for our time spent here. I doubt very much whether it means particularly more in a financial way to each and every one of us, but the prime element is the good of the patient. There is not a bit of doubt but what we have many blind people, blind workmen, in the state of West Virginia, just from lack of proper early treatment. We know that the initial treatment is the important one. We are over the hills, then. But when the general man—for instance, the contract physician—looks after all these conditions and runs them in to the specialist a week or ten days afterwards, when he gets scared, then we have an uphill job on our hands. Within the last eighteen months I have had two enucleations due to that kind of work. I have another one that I think will be awaiting me when I get back, and simply because these cases were not looked after properly at first.

Personally, I think we should take some concerted action today. Just before I left home to come over here, one of the field men from the compensation department came in to see me about a case that has been hanging for quite a while. I asked him if the field men ever made any suggestions to the compensation commissioner. "Oh," he said, "sometimes we do; but *you* are the fellows that ought to make the suggestions. I hear this all over the state, and I believe if you men would get busy the compensation commissioner would take notice."

Now, speaking of finances, I think there are often cases where we get $50 or $75 or $100 from the state compensation department, and in reality we only ought to have $15 or $20. I think it is costing the state more by not having a ruling that these eye injuries must go to the specialist immediately, and I think if we would talk to our operators—I mean the heads of our manufacturing plants—and explain it to them, they will see where they will gain by it. I talked to the manager of one of our mines just recently, and it didn't take him very long to see that it would be to his interest to have all of his eye injuries taken to the specialist immediately. I think it would be for the good of all concerned if we would take some step in this direction, and I think that Mr. Heaberlin would fall in line.

DR. S. S. HALL (Buckhannon): I don't think the state compensation commissioner is unfair about this thing. I remember when Mr. Heaberlin formulated his new system of fees. He called together a group of general men and general surgeons, and, to my knowledge, there wasn't a specialist in the group. They know very little about what we charge in our private practice, and they know nothing about our procedure. They don't pretend to. They probably know more than we give them credit for, but we had no voice there. They cut my bills just like they cut yours, but I feel that if we present a fee list it will be acted upon favorably. I, personally, think we ought not to forget that side of it, because Mr. Heaberlin—or we might better say the State Compensation Department proper—doesn't understand or doesn't see our side of it.

Typhoid Vaccine

Recently two investigators have observed the effect of oral administration of typhoid vaccine on antibody formation. Using the triple vaccine, they found that 88.5 per cent of their subjects developed agglutinins for typhoid and a lesser number for paratyphoid bacilli. This is compared to 80 per cent who, according to the literature, developed agglutinins after subcutaneous inoculation, and to 90 to 95 per cent who show a positive Widal reaction after suffering from the disease. The administration of bile before the vaccine increased the percentage and shortened somewhat the latent period in which agglutnins are developed. This interval, the investigators find, is no longer when the oral method is used than it is for the more orthodox method. Complement fixations and precipitins were tested in a smaller number of persons and were found to be present more frequently than in the case of subcutaneous inoculation. These results show a closer similarity in antibody formation to the immunity reaction of typhoid on the part of oral than of subcutaneous administration. However, clinical resistance to disease may not correspond accurately with the development of agglutinins or precipitins. A method so well proved as subcutaneous inoculation against typhoid will not be lightly abandoned.—*Journal A. M. A.*, April 6, 1929, p. 1185.

CASE REPORTS

TREATMENT OF SNAKE-BITE

By E. BENNETTE HENSON, M.D.
Charleston, W. Va.

In reporting two cases, in children, of copperhead snake-bit with recovery, I wish to call attention to certain recent developments in the treatment of snake-bite.

Jackson[1] has shown that the venom of poisonous snakes is slowly spread through the intracellular lymph spaces, finds its way into the lymph glands, and there produces a violent hyperemia, followed by death and necrosis of these glands. This is contrary to the old opinion that the venous system took it up rapidly. Crimmins[2] points out that a "strike" of a snake is an intramuscular injection of the venom. This would bear out Jackson's experiments.

The treatment, therefore, is wide and deep incision of the site of the bite, and, instead of using crystals of potassium permanganate or other similar chemicals, mechanical suction over the wound should be instituted and antivenom administered. The method used in the treatment of snake-bite is better stated in the following case reports:

CASE I.—C. L., male, age 7, while picking blackberries, was bitten on the palmer surface right wrist by a copperhead snake. A tourniquet of an old shirt was applied just below the shoulder by a neighbor almost immediately. The doctor, upon arriving 45 minutes later, applied some white powder to the wound after lancing it, but the tourniquet was left on until arriving at the Charleston General Hospital nine hours later. Upon examination at the hospital the right forearm and arm was found to be greatly swollen up to the tourniquet. The radial pulse could not be palpated and the entire extremity was cold. The tourniquet was released, the wound of the wrist was incised by a cross incision deep into the muscle, then around this, especially upon the forearm, multiple incisions were made through skin and fat and fascia, and, by means of the suction machine used in throat work, each wound was aspirated while normal salt solution was being injected into the tissue at site of bite. This was kept up for thirty minutes. One tube of antivenom serum was injected into the vein. The suction was repeated in two hours, for thirty minutes, and the serum was repeated in five hours. The following morning the entire picture had changed. The hand and arm were warm and of good color; the temperature was 100, pulse 80. Recovery was rapid, and the child was allowed to leave the hospital in five days.

CASE II.—L. B., female, age 8, white, while playing near weeds, was bitten by a copperhead snake at about three o'clock in the afternoon. At 4:30 P. M., 10 c.c. of antivenom serum was given intravenously and patient was sent to the Charleston General Hospital. She reached the hospital at 7:45 P. M. Multiple incisions were made at the site of the bite and washed out with normal salt solution as in the first case. (See Fig. 1.) Ten cubic centimeters of antivenom serum was given upon admission. The following morning the temperature and pulse were normal. The wounds were healing nicely the fifth day, and she was allowed to go home.

Each 10-c.c. syringe of antivenom will neutralize twenty or more milligrams of venom of any American poisonous snake *in vivo*. Therefore, each syringe should neutralize a minimum lethal dose of venom of a rattlesnake, moccasin or copperhead. The copperhead usually injects two lethal doses at one bite, as compared with nine of the rattlesnake. Mechanical suction can withdraw four minimum lethal doses of rattlesnake venom. It has not been proven that the venom can be completely neutralized by antivenom or that mechanical suction can withdraw the full dose of venom; therefore, the combination of antivenom and suction should be the treatment of choice. The treatment similar to that used in the two cases above has lowered the mortality of snake-bite from 35 per cent in 1922 to 2.7 per cent in 1928 in one part of Texas.

My advice to employees in lumber camps and electric linemen is not to place too much confidence in so-called snake-bite cures, but to promptly enlarge the wound, fill it with salt, and suck the wound often until a doctor is reached. If a tourniquet is used, it should not be put on tight enough to cut off the pulse.

(AUTHOR'S NOTE: Since this paper was prepared, a third case of copperhead snake bite was treated by a colleague as indicated above, with prompt recovery.—E. B. H.)

REFERENCES

1. Jackson, Dudley. *Southern Medical Journal*. Vol. XXII, No. [illegible], July, 1929.

2. Crimmins, M. L. *Southern Medical Journal*. Vol. XXII, No. [illegible], July, 1929.

HEMOLYTIC ANEMIA OF PREGNANCY*

By THOMAS W. NALE, M.D.
Charleston, W. Va.

The pernicious anemia of pregnancy is an acute hemolytic anemia of pregnancy which occurs in women under 35 years of age, is due to pregnancy and progresses steadily to death or recovery, and is curable by blood transfusion. Thus it differs from addisonian pernicious anemia, which is essentially a chronic disease of unknown etiology, occurring after 35 years of age, predominantly in men, is not curable by blood transfusion, and runs a course characterized by remissions.

About three per cent of the cases listed as pernicious anemia occur during or shortly after pregnancy. The condition is said to be quite common in India. McSwinney found an incidence of 1.69 per cent in one of the Calcutta hospitals. Dr. Allan states that this condition is not infrequent in North Carolina, and from my observation here, which is limited, it must not be very infrequent in the mountainous districts of West Virginia. It has been stated that the condition is more frequent in India during that part of the year when there is a greater number of diarrheal cases.

Of five hundred cases investigated from the literature by Dr. Allan, 75 per cent occurred in patients under thirty years of age and 29 per cent in primiparæ.

The general appearance of the patient is that of any severe anemia. The skin is of a lemon yellow tint and puffiness of the face and feet are common. The more common symptoms are weakness, vertigo, dyspnea, palpitation, poor vision, sore mouth, diarrhea, and vomiting.

Physical findings include blanched mucous membranes, sore tongue, a great variety of heart murmurs, and enlargement of the spleen. The blood pressure may be low or it may rise as in other toxemias of pregnancy.

The blood picture is very much like that of ordinary pernicious anemia with greatly diminished hemoglobin and red cells. Dr. Allan states that in 101 cases there was an average of hemoglobin of 30.1 per cent and an average red cell count of 1,467,000 in 137 cases, giving an average color index above 1. In 55 cases the leucocytes averaged 6,746. The diameter of the red cells is diminished rather than increased. Nucleated red cells are seen, but the majority are normoblast. In the urine, albumen is present in a variable amount.

This spring we had three such cases in our department. One patient signed a release from the hospital before we were able to thoroughly work up the case or give her a transfusion.

CASE I.—Mrs. F. G., white, age 27, was admitted to the hospital on April 10, 1929, giving the following complaints: headache, cough, weakness, soreness of the mouth, and edema of the lower extremities. Her predominating symptom was headache, from which she had been suffering for about four months.

Family history was negative, except that patient stated her three sisters were "not strong."

Past history: Only childhood disease was scarlet fever at three years. She was quite healthy up to her first pregnancy.

Menstrual history: Began to menstruate at 13 years; always irregular, occurring once or twice a month, lasting five to six days.

Obstetrical history: Five full-time pregnancies and one miscarriage. All deliveries were spontaneous. Her first infant was stillborn. With each pregnancy she suffered from marked nausea and weakness. This became worse with each succeeding pregnancy. Her puerperiums were uneventful.

Present illness: The day previous to admission the patient gave birth to an 8½-pound, normal child. The delivery was spontaneous, but the patient states that her doctor had to remove the placenta. She did not bleed excessively, however. For four months previous to delivery she was extremely weak and suffered from severe headaches. The headaches became much more severe following her delivery, and were not relieved by "hypodermics."

Physical examination: The patient was an adult female, appearing much older than her given age of twenty-seven years. She was poorly developed, markedly anemic, and appearing acutely ill. Her skin had a grapefruit yellow tinge and there was very little subcutaneous fat present. The mucous membranes of her mouth and throat were quite pale and dry-looking. The tongue was red and dry. Chest was negative, except for soft systolic murmur at the apex. Blood-pressure was 118/70. Abdomen presented all evidences of a marked relaxation of its wall. The liver was readily palpated and the uterus could be felt between the umbilicus and symphysis.

Laboratory findings (April 10, 1929): Red blood cells, 2,000,000; hemoglobin, 40%; color index,

* From the Department of Obstetrics of the Charleston General Hospital, Charleston, W. Va.

1; white blood cells, 7,000; polynuclears, 66; small lymphocytes, 34; many poikilocytes.

Urine, sp. gr. 1020; albumen negative; acid; sugar negative. Blood, 2 cells per field, 3 pus cells per field, 4 hyaline casts per field. Blood chemistry, non-protein nitrogen, 27.27 mg. per 100 c.c. of blood; sugar, 62.11 mg. per 100 c.c. of blood.

Gastric analysis: Ewald test meal, colorless; total amount, 90 c.c.; total acidity, 10; combined hydrochloride, 2; free hydrochloride, 0.

The patient ran a temperature of 103½° on April 13, 1929, and at this time her blood count showed 1,700,000 red blood cells, hemoglobin 35, leucocytes 6,500. On April 14, 1929, she was given 300 c.c. of whole blood. This brought her blood up to 1,900,000, hemoglobin 35, and white blood cells 4,500. On April 19 the red blood cells were 2,100,000, hemoglobin 35, and white blood cells 12,000. The blood smear showed many poikilocytes.

She was again transfused on April 21, and was given 525 c.c. of whole blood. The patient's convalescence was uneventful, with a gradual receding of her pulse and temperature and becoming symptom free. At her discharge from the hospital, May 5, 1929, her blood picture was much improved: Red blood cells, 2,900,000; hemoglobin, 45; color index, 0.758; leucocytes, 8,500; many poikilocytes; polynuclears, 69; small lymphocytes, 27; large lymphocytes, 4. In addition to the transfusions the patient was on a liver diet.

CASE II.—Mrs. L. W., white, age 29, was admitted to the hospital on April 13, 1929. She gave the following complaints: vomiting, diarrhea, sore throat and mouth, weakness, cough, and pregnancy.

Past history: None of the usual diseases of childhood except mumps at twenty-five years. Always healthy up to the time of her first pregnancy.

Menstrual history: Began at fourteen years and menstruates about twice a month, duration four days, without pain. Last period August 28, 1928.

Obstetrical history: Six pregnancies in last eight years. All normal, full-term children. Following her first delivery she was confined to her bed with childbed fever for six weeks. Her second pregnancy was uneventful. With her third pregnancy she suffered from marked weakness, but improved after delivery. Two months before her fourth baby was born she suffered from parotitis and was confined to her bed for three months. With her fifth pregnancy the weakness returned and she was practically bedfast throughout the pregnancy. She became pregnant shortly afterwards, and three months before her expected date of confinement she was so ill that she was taken to the Laird clinic at Montgomery. She was given two transfusions before and two after delivery. From the second obtained from the Laird clinic we found that she presented a very similar clinical picture as when we saw her at the Charleston General Hospital.

Physical examination: The patient is a white female, markedly anemic, very uncomfortable, and appearing acutely ill. Temperature 99.4°, pulse 90, respiration 20, blood-pressure 120/30. Teeth in poor condition and mucous membranes pale and dry. Throat negative; thyroid enlarged, but not tender. Lungs negative. Heart was enlarged to the left and a soft systolic murmur was heard, transmitted to the axillæ. Abdomen was enlarged, appearing larger than would be expected at 7½ months' gestation. The fœtus was readily palpated and the heart sounds were good.

Laboratory findings on admission April 13, 1929: Red blood cells, 1,100,000; much poikilocytosis; hemoglobin 30; color index 1.3; white blood cells, 4,000; polynuclears 40; small lymphocytes 56, large lymphocytes 2; eosinophiles, 1; others, 1.

Urine: Dark amber; acid; albumen, negative; sugar, negative; microscopic, 4–5 blood cells per field, 8–10 pus cells.

Ewald test meal: Total amount, 40; total acidity, 35; combined acidity, 5; free hydrochloride, 20; blood, heavy trace.

On April 15 the patient was given 500 c.c. of whole blood, using the Unger method. The following day her blood count was: Red blood cells, 1,200,000; hemoglobin, 30; color index, 1.25; white blood cells, 5,000; polynuclears, 60; small lymphocytes, 30; eosinophiles, 2; others, 8; many poikilocytes and many polychromatophils.

On April 18 the patient went into labor and delivered herself of twins. They were quite vigorous prematures and both lived.

On April 20, 304 c.c. of whole blood was given the patient, and two days later her red blood cell count was 1,525,000, hemoglobin 35, and color index 1.16. On April 30 she was given 485 c.c. of blood, and on May 2 her red blood cell count was 2,500,000, hemoglobin 40, color index 0.80.

The patient was discharged, and she returned to the hospital on June 19, 1929, for observation. As she was still anemic, she was given 500 c.c. of blood. This brought her blood picture up to 3,300,000 red blood cells and a hemoglobin of 45.

It was considered advisable to give her a radium treatment to produce an amenorrhea for a period of 12 to 15 months. She was given 1,200 milligram hours. This was done because of her having had a similar condition with her previous pregnancy and because of her frequent menstruations.

The cures in these cases were not as prompt as those recorded in Dr. Allan's series. These were two cases in which three patients had had too many pregnancies in too short a time. This condition added to an environment such as they lived under in mining communities.

I am indebted to Dr. B. S. Preston, who was the internist in these cases, and to Dr. J. B. Banks and Dr. R. K. Buford, who gave the blood transfusions. No true reaction was observed in any of the transfusions.

REFERENCE

1. Allan, William: *Surgery, Gynecology & Obstetrics*, Vol. XLVII, No. 5.

POLIOENCEPHALITIS

By EUGENE AMOS HOLLAND, M.D.
Bryn Mawr Hospital
Bryn Mawr, Pa.

Mr. C., white, male, single; occupation, secretary; age 30. Admitted July 6, 1929, 10:15 A. M.

Family history: Negative, except for the statement that the patient comes from a highly neurotic family.

Chief complaint: Headache, inability to swallow, some loss of power of voice, dizziness, difficulty in standing.

Present illness: Two days before admission the patient awoke in the morning, felt dizzy, could not walk without holding on to something, could not swallow, some impediment of speech, and double vision for a short period. Five months ago, had numbness of the fourth and fifth fingers on the left hand; went to the Orthopedic Hospital for treatment, but trouble remained about the same. This hospital record was obtained. Physiotherapy had been used and no diagnosis made.

Past history: Measles, mumps, chickenpox, whooping-cough in childhood. No operations or injuries. No head injuries. Has not had any illness in past several years.

Review of systems: Head—History of headache; no vertigo before present illness. Circulation respiratory—No dyspnea; "rose cold" till two years ago. Gastrointestinal—Appetite good; eats all types of food; projectile vomiting; recurrent hiccough for past two days.

Physical findings: General appearance—Well-nourished, white male, age 30; lying in bed; distress from headache, loss of deglutitory power; mentality and coöperation good. Head—Normal in shape, size, and contour; no masses or tenderness over sinuses or mastoids; good growth of dry, light hair. Eyes—See neurological examination. Ears—Negative; no discharge or loss of audition. Nose—Mucous membrane normal; septum slightly deviated to right. Mouth—Mucous membrane pink and normal; no pyorrhea or caries; pharynx not injected; tonsils absent, no tonsil tabs; palate movement sluggish. Neck—Thyroid normal; no abnormal pulsation; no glandular enlargement. Chest—Symmetrical and rounded; vocal and tactile fremitus; whispered and spoken voice, physiological; breath sounds clear, vesicular; no adventitious sounds; percussion note resonant throughout. Heart—Apex beat palpable in fifth interspace; L. C. B. 1 cm. inside M. C. L., R. C. B. at S. M. No increase in lateral limits of dullness. Pulse rate 60, rhythm regular, force normal. No murmurs, shocks or trills. Blood-pressure 120/65. Abdomen—Rounded and soft; no tenderness, rigidity, or masses. Spleen, liver, and kidneys not palpable. Genito-urinary—Negative to inspection; no evidence of lues. Reflexes—See neurological examination.

Neurological examination: Pupils small, unequal; the right is larger, the left is irregular. Both react to light. Distinct nystagmoid movements are present both horizontally and vertically. Eyegrounds are clear and have a healthy appearance; edges not blurred. Vessels of normal caliber; no retinal hemorrhages or exudates. Conjugate movements are equal. The face can be moved freely, the upper part more than the lower; the tongue can be moved freely and protrudes in the midline; palate moves well—when he swallows water he says it seems to stick half-way down. All deep reflexes are taut normal. Clonus is not obtainable. Plantar reflexes normal. Right abdominal reflexes are active; the left can not be obtained. Muscular power in the extremities is good. Sense of position and pain normal. Corneal reflexes are not as active as they should be. The neck is somewhat stiff. Kernig's sign not obtainable. No evidence of mastoid disease.

Laboratory: Blood—Wasserman negative; white blood cells on duplicate count 6,100 and 6,500; polynuclears 67%; lymphocytes 23%; mononuclears and transitionals 8%; eosinophiles 2%; blood sugar, 65 mgm. per 100 c.c.; blood chlorides, 760 mgm. per 100 c.c. Spinal fluid—Wasserman, Kahn

and Noguchi negative; under no increase in pressure, 7 mm. by manometer; fall, 15 drops per minute, fluid clear; colloidal gold curve normal; cells, 3 per field, no increase or abnormal cells; globulin not increased. Urinalysis—normal. Feces—Negative. Temperature — Tended to be subnormal throughout the entire illness, twice reaching 95 4/5. Pulse—Varied from 44 to 58 per minute. Respirations—Varied from 18 to 30 per minute.

Discussion: This man gives a history of double vision, difficulty in swallowing and in talking, and intense dizziness. He is clear mentally and has no disturbance of his extremities. The diagnosis is polioencephalitis, which may be due to the following causes: (1) Epidemic encephalitis; (2) poliomyelitis; (3) syphilis; (4) food poisoning; (5) other infections, such as diphtheria.

Syphilis may be ruled out by the negative blood Wasserman, the negative spinal-fluid Wasserman, the negative Kahn reaction, the normal colloidal gold curve, and the lack of clinical evidence of syphilis.

Food poisoning is a rare cause. From close questioning it seems unlikely. The stools were normal, well digested, and gave no evidence of a gastrointestinal upset which would invariably accompany food poisoning.

There was no evidence of other infections on examination. The white blood count and temperature are against other infections.

This leaves epidemic encephalitis and the bulbar form of acute poliomyelitis as causative agents. It is impossible in this case to decide which is the etiological factor.

Treatment: Proctoclysis continuous of glucose 5% and sodium bicarbonate 2% at the rate of 30 drops per minute. Intravenous injection of 1 pint normal saline twice daily, first week. Luminal sodium, gr. III, hypodermically, nightly and repeated if necessary. Glycothymolin as a mouth wash every two hours, followed by lemon and glycerin application. Alcohol sponge every two hours when awake. Foot of bed raised eight inches. Ice cap to head, ice collar to neck.

At the beginning of the second week the patient was given ice to suck, and clear broth, 3 ounces, every three hours, alternating with orange juice, 3 ounces. On the tenth day, full liquid diet was started. On the twelfth day, soft diet was ordered.

Progress: On the third day the paralysis was noticed to be improving. Test sentences were more distinctly enunciated and voice had a better volume. The patient was able to swallow saliva. From this time on, a gradual improvement took place. The headache became less severe and finally subsided. At the end of the first week, patient's voice was normal and he was able to swallow small amounts of water from crushed ice. At the beginning of the second week he could take some fluids, and on the tenth day he was allowed to sit up and have full liquid diet. On the twelfth day, soft diet was ordered, which the patient handled with ease except for amount of numbness in his throat. The patient was given house diet on the fifteenth day and was allowed to go about some. Recovery is now complete (July 15, 1929), with no discernible pathology remaining.

ABSTRACTS

Atelectasis and Pneumonia

EDITOR'S NOTE — The following four articles were read in a symposium on atelectasis and pneumonia, February 25, 1929, and were pubished in full in the *Journal of the American Medical Association*, Vol. 93, pages 96-103, July 13, 1929.

Postoperative Apneumatosis (Atelectasis) and Postoperative Pneumonia: Experimental Evidence. By Pol N. Coryllos, M.D.—Dr. Coryllos, working in the Department of Research at Cornell University Medical School, during the past few years has been carrying out extremely interesting experiments which show a marked similarity between postoperative pneumonia, atelectasis (apneumatosis), and true medical pneumonia. Pathological, clinical, röntgenological and therapeutic data have been obtained to substantiate this theory. The pathogenesis in each of these conditions is regarded as the same. The points of difference are the virulence of the pneumococcus, the presence of other infecting organisms and their virulence. The article is so brief and so well presented that it should be read by every physician and surgeon, because of the probable change in our concept of pneumonia and the indicated rational therapy.

The Physiology of Atelectasis. By Yandell Henderson, Ph.D., New Haven, Conn.—Dr. Henderson emphasizes the functional element in pneumonia, stating that normally the lungs are the best-drained organs in the entire body; the upward movement of the secretion being maintained by the cilia, by coughing, and by muscular contractions of the walls of the airways. The work of Macklin is cited, who in turn quotes Gunn to the effect that the respiratory tract has three methods of freeing itself from small foreign bodies or retained secretions: (1) the cough reflex, (2) the action of cilia, and (3) peristaltic movement in the air sacs, bronchioles and bronchi. Shallow breathing predisposes to bronchial

obstruction and this to atelectasis in the obstructed areas. The use of 5% carbon dioxide in oxygen inhalations during the past 20 years has practically eliminated pneumonia in carbon monoxide asphyxia. The increasing use of carbon dioxide inhalations following operations, the turning of patients from side to side, postoperatively, and the avoidance of tight strapping of the upper abdomen and chest with adhesive tape, postoperatively, is lessening the number of postoperative pulmonary complications. In concluding, Dr. Henderson states that closure of a bronchus or of the bronchioles is a determining factor in the development of pneumonia. The deep breathing induced by carbon dioxide has already proved capable of preventing such closure and keeping the lungs open. Inhalation of carbon dioxide thus offers a prophylaxis of probable value in the early stages of pneumonic infection. It may be of therapeutic value even in advanced stages of the disease.

Röntgen Observations in Massive Atelectasis and Postoperative Pneumonia. By George W. Holmes, M.D., Boston, Mass.—Dr. Holmes describes in a brief but complete manner the röntgenological changes observed in massive collapse and postoperative pneumonia. He states that, in partial obstruction due to foreign body, the diaphragm on the affected side is not so high as in complete collapse; that the error in diagnosis of collapse usually occurs because it is overlooked; that the differentiation of atelectasis, pneumonia, or infarction from shape, density, and position alone are impossible, but that in the latter two conditions the cardiac displacement is not so marked and the height of the diaphragm not so extreme. There is usually some respiratory excursion present, and there are not infrequent dull areas in the opposite lung.

Massive Atelectasis and Postoperative Pneumonia: Prophylaxis and Treatment. By W. J. M. Scott, M.D., Rochester, N. Y.—Dr. Scott cites figures from two series of operative cases. Series 1, which consisted of 2,000 cases in which postoperative hyperventilation with carbon dioxide in oxygen was not carried out; in this group there were twelve cases of atelectasis. In Series 2, of 2,850 cases who had postoperative hyperventilation with carbon dioxide in oxygen, there occurred only three cases of atelectasis. No statistics are presented as to prophylactic or therapeutic value of the procedure in postoperative pneumonia. — M. C. BORMAN, Montgomery Clinic, Montgomery, W. Va.

TUBERCULOSIS ABSTRACTS

Sputum, Pleural Effusion, and Special Fluids

The secretions of the tuberculous body vary according to the site of the disease and its degree of development. Sputum, for instance, may be very scanty in amount and mucoid in character in one stage of the disease, and very abundant, purulent, bloody or foul at other stages. Pleural effusion fluids may be serous or bloody; they may contain but few cells or may be frankly and grossly empyematous. Urine may contain pus or blood, or both. Cerebrospinal fluid may be clear and limpid or turbid. None of the secretions has properties that are specific for tuberculosis, but most of them do possess characteristics which strongly suggest tuberculosis.

Sputum.—Sputum may differ in quantity and quality in different stages of pulmonary tuberculosis. A small, non-ulcerative lesion that is moderately well invested with fibrous tissue will produce but little mucus, fibrin, débris, or pus cells, as compared with the ulcerative or cavitative lesion; yet it does have certain general features of importance. It is often thick, tenacious, yellow, or grayish-yellow, mucopurulent or purulent. The specimen frequently consists of a thin, salivary liquid in which the mucopurulent "gobs" are suspended; these sink to the bottom as rounded, "nummular" bodies. Interspersed throughout the more homogeneous, thick matrix of these bodies may frequently be found numerous minute, whitish, opaque particles, and these are much more likely to contain tubercle bacilli than other portions of the specimen. They are more readily detectable when the specimen is placed in a petri dish or on a glass plate and examined over a black background. They may be brought to view by squeezing the specimen between glass plates.

The sputum may be bloody. Blood may be present in large quantity or it may be represented merely as an occasional "streak." Blood in the sputum, regardless of the amount, is a leading indication of tuberculosis and justifies a presumption that tuberculosis is the cause, until a definite cause is demonstrated. The physician in charge of the hemoptoic patient must, therefore, determine the source of the blood, if this is possible. Bloody sputum should always be carefully examined for tubercle bacilli, although when the amount of blood is large the number of bacilli is usually proportionately small.

Tubercle bacilli are nearly always, sooner or later, demonstrable in pus which comes from the tuberculous lung. The continued presence of such sputum,

in which repeated examinations fail to reveal these bacteria, is presumptive evidence against tuberculosis and points rather to some other pulmonary disease (abscess, bronchiectasis, myotic infection, etc.).

The sputum raised soon after the patient gets up in the morning usually contains more bacilli than specimens obtained at other times. It may become necessary for the doctor to supervise the collection, especially in people with only a slight cough and but little sputum.

The most significant constituents of the sputum in tuberculosis are tubercle bacilli. In the late stages these are exceedingly numerous and easy to find, but in early stages, when the diagnosis is uncertain, very few tubercle bacilli may be present, and only intermittently so. Therefore, frequent, careful examinations, repeated daily for some time, should be made. The old Ziehl-Neelsen staining technique is simple, relatively quickly carried out, and thoroughly dependable.

Pleural Effusion.—Pleurisy with effusion is regarded as being tuberculous until some other etiological factor can be definitely demonstrated. The fluid is viscid and usually of a straw or amber color, but may be sanguinous or empyematous. It is an exudate fairly rich in lymphocytes and of rather high specific gravity. It is obtained by ordinary thoracentesis. It must be differentiated particularly from the fluid which occurs in the chest in cardiac disease and from that in pulmonary neoplasm. The fluid in cardiac diasease is nearly always thinner, of lower specific gravity and cellular content than that in tuberculosis. It is associated with cardiac disease, is often bilateral, and tends to recur. The fluid in association with tumor tends to be sanguinous; if not bloody at the first aspiration, it is very likely to become so on repeated tappings. It tends to recur. The clinical history and examination, together with the continued absence of tubercle bacilli in the fluid, point away from the diagnosis of tuberculosis.

The fluid in pleurisy with effusion must either be examined promptly upon withdrawal or an anticoagulant must be added. Painstaking microscopic examination of the sediment of fairly large amounts of the fluid in pleurisy will yield tubercle bacilli in more than one-half of the cases. The incidence is much higher when the fluid is empyematous. Indeed, the fluid in tuberculous empyema sometimes contains myriads of tubercle bacilli, especially if rupture of a cavity wall has taken place. It is well to centrifugalize several hundred cubic centimeters of the fluid, remove the sediment, and recentrifugalize it for microscopic examination, animal inoculation, or planting on culture.

Cerebrospinal Fluid.—In tuberculous meningitis, the fluid is generally limpid, clear, and under slightly increased pressure, although in fulminant cases it may be turbid. The cell count is generally above 100 cells per cubic millimteer and may reach several hundred without the appearance of a grossly detectable opalescence. A few hours after withdrawal, there nearly always develops within the fluid a characteristic (but not pathognomonic) grayish-white, thin, filmy veil which is composed of strands of fibrin that form a delicate network. In the meshes of this structure is gathered most of the particulate matter of the specimen—cells, tubercle bacilli, etc. This pellicle is, therefore, of importance in the search for tubercle bacilli. It may be prepared for stain very easily, as follows: A clean coverslip containing a thin film of fixative is placed in the bottom of a clean medicine glass. The fluid is then collected directly into this container, which is placed in the ice-box for a few hours or over night. The pellicle is deposited on the coverslip, which is recovered after a very careful removal of the fluid with a pipette. The coverslip is then allowed to dry, is fixed by passage through a low flame, stained and examined. Cerebrospinal fluid may be centrifugalized and the sediment inoculated on media or into animals.

Urine.—Tuberculosis of the genitourinary system is uncommon without evidence of the disease in some other part of the body. Frequency of urination, intermittent hematuria or pyuria or unexplained polyuria (especially in renal tuberculosis) suggest a careful search of the urine for tubercle bacilli. Urine containing pus in which microörganisms of disease are absent is a leading sign of renal tuberculosis, because in nearly every other disease which causes pyuria the causative bacteria are easily detected. However, the detection of other bacteria in such urine does not eliminate tuberculosis, for secondary invaders are not uncommon. Sterile pyuria may occur in posterior urethritis.

Tubercle bacilli may be present in the urine in enormous numbers, although sometimes very few are detectable. They may be conveyed by the hands to the urine from the patient's sputum and thus lead to a false diagnosis. Bacilluria is frequently intermittent. For microscopic study, either a specimen obtained after scrupulous cleansing of the external meatus and irrigation of the external urethra with sterile water or the sediment of a 24-hour specimen should be used. Smegma bacilli inhabit the external genitalia and may lead to an erroneous diagnosis unless this be guarded against.—HENRY STUART WILLIS, M.D., Johns Hopkins Hospital, Baltimore.

THE WEST VIRGINIA MEDICAL JOURNAL

JAMES R. BLOSS, *Editor-in-Chief* - - - - - - - - - Huntington

...ASSOCIATE EDITORS...

J. HOWARD ANDERSON, Marytown — WALTER E. VEST, Huntington — C. A. RAY, Charleston — HARRY M. HALL, Wheeling

THE JOURNAL issued on the first of each month. Entered as second-class matter January 1, 1926. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917. Authorized July 24, 1919.

Subscription to Members ..... $2.00 Per Year
Subscription to Non-Members ..... $3.50 Per Year
Single Copies ..... 50 Cents

OFFICERS

President:
H. M. HALL ..... Wheeling

First Vice-President:
B. F. BONE ..... Moundsville

Second Vice-President:
W. C. SWANN ..... Huntington

Third Vice-President:
J. A. DUFF ..... Martinsburg

Executive Secretary:
MR. JOE W. SAVAGE ..... Charleston

Treasurer:
T. MAXFIELD BARBER ..... Charleston

Delegates to A. M. A.:
JAMES R. BLOSS (1928-29) ..... Huntington
HENRI P. LINZ (1928) ..... Wheeling

Alternates:
A. A. SHAWKEY (1928-29) ..... Charleston
HARRY M. HALL (1928) ..... Wheeling

COUNCILLORS

Chairman of the Council for 1928:
R. H. DUNN ..... South Charleston

First District:
C. W. WADDELL (2-year term) ..... Fairmont
C. G. MORGAN (1-year term) ..... Moundsville

Second District:
C. H. MAXWELL (2-year term) ..... Morgantown
C. H. HALL (1-year term) ..... Elkins

Third District:
JOHN FOLK (2-year term) ..... Bridgeport
J. D. COLE (1-year term) ..... Clarksburg

Fourth District:
ROY BEN MILLER (2-year term) ..... Parkersburg
W. E. VEST (1-year term) ..... Huntington

Fifth District:
J. HOWARD ANDERSON (2-year term) ..... Marytown
H. G. STEELE (1-year term ..... Bluefield

Sixth District:
R. H. DUNN (2-year term) ..... South Charleston
H. A. WALKUP (1-year term) ..... Mt. Hope

¶ All original articles for THE JOURNAL must be made to it exclusively. Communications and items of general interest to the profession are invited from all parts of the state. Notices of deaths, removals from the state, changes of location, etc., are requested.

¶ Our readers are requested to send marked copies of local newspapers containing matters of interest to members of the medical profession. Name of sender should be given.

CONTRIBUTIONS TYPEWRITTEN

¶ Contract with present printer specifies all articles, communications, etc., MUST BE TYPED.

ADVERTISEMENTS

¶ Advertising forms will go to press not later than the tenth of each month. All advertisements must conform to the standard established by the Council of Pharmacy and Chemistry of the A. M. A.

WOMAN'S AUXILIARY

Mrs. R. V. Shanklin, Gary, President; Mrs. T. H. Harris, Parkersburg, vice-president; Mrs. W. C. Swann, Huntington, secretary; Mrs. W. D. Simmons, Slab Fork, treasurer.

Councillors

Mrs. C. G. Morgan, Moundsville, first district; Mrs. Ralph Maxwell, Morgantown, second district; Mrs. H. D. Price, Parkersburg, third district; Mrs. J. R. Bloss, Huntington, fourth district; Mrs. A. G. Rutherford, Welch, fifth district; Mrs. E. S. DePuy, Beckley, sixth district.

Delegates to Woman's Auxiliary of A. M. A.

Mrs. R. V. Shanklin, Gary; Mrs. B. S. Preston, Charleston. Alternates — Mrs. George Jeffers, Parkersburg; Mrs. W. B. Scherr, Morgantown.

STANDING COMMITTEES

Medical Defense Committee

C. G. Morgan, Moundsville, Chairman; H. A. Walkup, Mt. Hope; H. G. Steele, Bluefield.

Committee on Scientific Work

O. B. Biern, Huntington, chairman; G. H. Barksdale, Charleston; A. G. Rutherford, Welch.

Public Policy and Legislative Committee

R. A. Ireland, Charleston, chairman; R. H. Walker, Charleston; James McClung, Richwood; C. R. Ogden, Clarksburg, D. A. MacGregor, Wheeling.

Committee on Medical Education

John N. Simpson, Morgantown, chairman; W. T. Henshaw, Charleston; W. S. Fulton, Wheeling.

Committee on Professional Relations

John R. Shultz, Charleston, chairman, (5-year term); A. G. Rutherford, Welch, (2-year term); W. R. Goff, Parkersburg, (2-year term); Hugh G. Nicholson, Charleston, (3-year term); E. P. Smith, Fairmont, (4-year term)

Workman's Compensation Committee

W. A. MacMillan, Charleston, chairman; C. A. Ray, Charleston; John E. Cannaday, Charleston.

Committee on Public Health

David Littlejohn, Charleston, chairman; John Thames, Charleston; Will McLain, Wheeling.

Surgical Section

Robert King Buford, Charleston, chairman; B. I. Golden, Elkins.

Eye, Ear, Nose and Throat Section

I. D. Cole, Clarksburg, chairman; C. C. Jarvis, Clarksburg.

Hospital Association Officers

R. A. Ireland, Charleston, president; J. S. Turk, Wheeling, president-elect; B. I. Golden, Elkins, first vice-president; W. E. Vest, Huntington, second vice-president; Mr. Joe W. Savage, Charleston, secretary-treasurer.

PRESIDENT'S PAGE

There seems to be some misunderstanding as to the present status of the Medical Defense Fund. It is not the purpose here to give a resume of all the parliamentary happenings which have led up to the decision, by those qualified to consider it, to abandon it on the first of the coming year. Strange to say, few cases of malpractice are founded on legitimate reasons. By experience and research it has been found that vitamins, hormones, endocrines, light, obscure disease, as well as certain diversions of the reticulo-endothelial system, play an all-important part in the cure and healing of body tissues which have been the scene of operative work or trauma. On the other hand, they do not always live up to their usual requirements as to performance. They depart from standard or expectant activity. These irregular departures are quite beyond the control of any surgeon or internist. He can be said to have no responsibility in their vagaries in the present light of scientific achievement. The day may come when he will. It is not here today. Outcome from one of these anomalous factors, coming irregularly and abnormally into play, is generally the cause for delayed healing or poor results on which suits are based. Indifferent splinting or miscalculated diagnoses are indeed possible, of course; but it is denied they are the common causes. It is because of these breaks in functional activity of the healing and repair processes that bones do not unite and recovery proceed as it should. It is for these very reasons that medical defense exists and why it is medical men stand together with remarkable solidarity when one of their number is accused for what he can exercise no control over. Medical men do not rush violently to protect each other if one should by chance commit a ruthless murder or embezzle funds, nor if he should grossly neglect his work. These misadventures would be of the kind that could have been prevented.

The West Virginia Medical Defense was originated and fostered in other days when the sum allotted meant considerable help and succor in those perilous times when patients, ill advised, sought to harrass their former medical attendants. It indicated to the plaintiff and the public as well as the other members of the state association just where the association stood. But we are not a financial institution in any sense of the word. We have dues, collect money, and possess an ample reserve. But this is for contingency and operation and for consideration of such a thing as a new building at some future hour and other similar requirements. It is a modest sum. Let us take a curious glance at seeking damages for any reason in the courts of today. It is quite startling. All of them are for what could well nigh be called extravagant sums. Years ago, $25,000 was outrageous. Later, $50,000 seemed absurd. Today, it can easily reach $100,000, and four or five times that is tried. To be sure, they are rarely successful as to obtaining the full sum, but $50,000 is now and then awarded. Twenty-five thousand dollars would probably represent more than the entire resources of most state medical associations. The sum advanced by any state medical defense fund would be clearly, in the nature of things, a mere bagatelle and could be of advantage only in quickly furnishing cash for witnesses' expenses and other such small sums. It would be of negligible use in any modern suit. Liability (physicians' and surgeons') insurance today, whether single policy or group, practically takes care of all contingencies and all responsibility. A mere writing in sets the whole system of wheels in motion. Very often that is all that is needed. Experience has shown that, in such cases, it is better to consolidate or pool all the legal movements into one concentrated effort. To have two agencies is confusing in the attempt to establish demarcation, while the financial assistance of the defense fund is of no consequence to the mammoth concerns which alone are in possession of the vast claims. For these as well as for other reasons, the defense fund of the West Virginia State Medical Association will be abandoned on January 1, 1930.

Harry M Hall

EDITORIAL

West Virginia Abstracts

Every year a number of scientific papers and articles by West Virginia authors appear in other state journals and in many of the national medical journals. More often than not they are discovered by the author's fellow practitioners in this state and read with a great deal of interest. Occasionally a member of the state association has an article in a national journal and the article is not discovered at all.

It has been suggested that the editors of the WEST VIRGINIA MEDICAL JOURNAL be notified by the authors whenever an article by a West Virginia doctor appears in an outside medical journal. We consider the suggestion as a most excellent one. If the authors of articles in other journals would notify the WEST VIRGINIA MEDICAL JOURNAL as each article appeared, then the editors could have abstracts of the articles made for immediate publication in the state journal. This plan, if successful, would provide an excellent means for all of us to keep posted on the work of our own men in the national field of medicine.

COUNTY SOCIETY NEWS

Tri-State Meeting

The fall meeting of the Central Tri-State Medical Society will be held at the Hotel Prichard, Huntington, on the afternoon and evening of September 19, 1929. The afternoon session will get under way at two o'clock, and a banquet will be served between the afternoon and evening sessions. The program has just been announced for this meeting by Dr. James S. Klumpp, of Huntington, secretary.

The program for the September 19 meeting will open with a paper by Dr. Leo Buerger, of New York City, on "Circulatory Disturbances of the Lower Extremities," illustrated with lantern slides. The other speakers on the program include Dr. Horton C. Casparis, of Nashville, Tennessee, who will talk on "Treatment of Tuberculosis in Children"; Dr. Frank Harrah, of Columbus, Ohio, who will talk on "Urology in General Practice," and Dr. J. Shelton Horsley, Jr., of Richmond, Va., who will read a paper on "Some Observations in Plastic Surgery of the Face."

Barbour-Randolph-Tucker

The Barbour-Randolph-Tucker County Medical Society met in the Tygart Hotel, Elkins, at six o'clock on the evening of July 25. Following a supper served there to the members present, the society adjourned to the hotel parlor, where the scientific program was presented.

Dr. C. B. Williams, of Philippi, president, presided at the meeting and called upon Dr. C. H. Hall, of Elkins, who reported upon the state meeting at Martinsburg. At this time the death of Dr. Perry Bosworth, of Huttonsville, on June 25, 1929, was also reported.

Dr. D. C. Gordon, of Elkins, read a most instructive paper on the treatment of burns, in which he listed the several things necessary to secure good results as well as the many difficulties to overcome and the dangers and complications resulting from extensive surface burns. He mentioned the many methods heretofore employed, but stated he had found the tannic acid treatment by far the nearest to the ideal. He pointed out that it lessened pain, formed a hard, dry coating, lessened absorption, and that it was safe and cheap. Dr. Gordon uses a five per cent solution, applied by saturating a cloth or preferably by spray.

Dr. B. I. Golden, of Elkins, in discussing the paper, said that some of the best surgeons used a much stronger solution, and said that we need not be so careful of the exact strength. He pointed out that it should be strong enough to meet the requirements. Both Dr. Golden and Dr. Gordon suggested that physicians, when called to see cases of burns, would do well to use the tannic acid method. They said it would greatly facilitate the later hospital treatment, as the oil method frequently interfered in the acid treatment and tended to retard the desired effects. Dr. O. L. Perry, of Elkins, called attention to a recent advocate of horse serum in the treatment of burns, but because this could not always be at hand, and because of the cost of the serum, it was considered impracticable in general practice.

Dr. C. H. Hall read a paper deploring the present status of the physician as compared to what it formerly was. He called attention to the great change in the attitude of the physician with regard to the practice of his profession and his interest in public affairs. Dr. Hall regretted that the specialists and cults are usurping the duties of the general practitioner to such an extent that the old-time physician is almost extinct. He insisted that in order to keep the medical status where it should be and check the

inroads of the various cults, so prevalent and dangerous to the public, physicians should and must take more interest in politics and, in fact, become politicians themselves. He urged that the profession unite more closely than ever and work through the legislature to check the schemes and vicious methods now in vogue. The paper was discussed at length and gave much for thoughtful consideration.

Those present at the meeting were Drs. C. B. Williams, D. C. Gordon, C. H. Hall, E. M. Hamilton, F. K. Lyon, B. I. Golden, O. L. Perry, W. E. Whiteside, R. J. Condry, A. S. Bosworth, and J. C. Irons. J. C. IRONS, Secretary.

Fayette County

The Fayette County Medical Society held its monthly meeting August 13 at the White Oak Country Club, Oak Hill. There were thirty-nine physicians present, among them the following guests: Dr. J. C. McKenzie, Beckley; Mr. Stanley C. Higgens, secretary, New River Coal Operators' Association, Mount Hope; Dr. B. W. Eakin, Tams, with a guest, Dr. Woolwine of Virginia Polytechnic Institute; Dr. C. F. Mahood, Alderson; Dr. G. H. Barksdale and Dr. T. M. Barber, of Charleston.

Following the banquet there was an address by Dr. Charles W. Burr, of Philadelphia, professor of neuropsychiatry of the University of Pennsylvania, a teacher in the graduate and undergraduate schools of that institution and physician to the Orthopedic Hospital and Infirmary of Nervous Diseases, Philadelphia. Dr. Burr spoke about the prevention of mental diseases, emphasizing the importance of acute infectious diseases, such as encephalitis and typhoid fever, the importance of syphilis, and the influence of heredity and environment.

Dr. Burr stated that careful investigation of case records reveals the interesting fact that, where the family history is definitely known, there has been no patient with a definite mental disease whose ancestors had not had some form of mental disease. The practical suggestion made by Dr. Burr to the members of the society was that a real attempt must be made to discipline and control our youth. The pernicious influence of law-breaking, as illustrated by the thirteenth amendment violations, were mentioned. H. A. WALKUP, Secretary.

Kanawha Medical Society

Dr. Hugh Trout, of Roanoke, Va., will present the scientific program for the first fall meeting of the Kanawha Medical Society, which will be held at the Public Library building, Charleston, at eight o'clock on the evening of September 3. Dr. Trout will read a paper on "Varicose Ulcers," illustrated with a moving-picture film. Discussion will be opened by Dr. John E. Cannaday and Dr. R. H. Dunn.

The Kanawha Medical Society has already arranged for the first four meetings for this fall, after having dispensed with all activities during the summer months. A number of excellent out-of-state men have been secured for scientific presentations and a highly successful series of meetings is anticipated. RUSSEL KESSEL, Secretary.

ANNOUNCEMENTS

Kloman Instrument Company

The Kloman Instrument Company, of Washington, D. C., will open a branch store and surgical supply dêpot at 1021 Quarrier Street, Charleston, about September 1, according to a recent announcement by W. C. Kloman, president of the institution. Mr. Albert J. Curran will be in charge of the new store, which has already been leased, while Mr. L. K. Kloman will be his assistant.

The Kloman branch in Charleston will be one of the first stores of its kind ever to locate in West Virginia. It is understood that an expert bracemaker will be connected with the Kloman branch, and that efficient repair service will be available. The store expects to establish a complete department of trusses, abdominal belts, and elastic hosiery, and to take care of the needs of hospitals, doctors, and nurses.

HOSPITAL NEWS

Hospital Economy

It is generally conceded that hospitals are not profitable business ventures. In West Virginia that general statement does not in all cases hold true. The reason for the special, favorable situation in this state is that, with a very high percentage of native population and the active industrial work, most of the population are able to finance their needs both in health and in sickness. West Virginians may justly feel proud of this distinction.

It is unfortunate that some hospitals have recently found it necessary to increase their rates. I say unfortunate because a situation may develop like that in most parts of the country where a large percentage of the hospital patients can not pay their way,

and where hospitals must depend on public donations. I do not mean to imply that church hospitals or other public hospitals are unfortunate because of such support, or that they are less efficient; but I mean that a community is better off when each individual is able to pay for what he and his family needs.

The recent situation in Chicago relating to the cost of hospital and medical service has not increased the esteem or respect of the public for either side in the controversy. It is well to avoid such public discussions.

I have already suggested to the hospitals of West Virginia the advisability of investigating the advantages of coöperative buying, such as is carried on in Cleveland. Such a course might reduce some of the overhead costs of hospital business.

I now suggest that every hospital communicate with the United States Department of Commerce, Bureau of Standards, Washington, D. C., and ask for suggestions on how to reduce the costs of hospital operation.—R. A. IRELAND, M.D., President, Hospital Association of West Virginia.

BOOK REVIEWS

An Introduction to the Study of Physics by William Heberden

A Prefatory Essay by Leroy Crummer. Paul B. Hoeber, Inc., New York. $2.00 net.

This little volume presents a double interest to the doctor of medicine. The first portion is devoted to an essay by Leroy Crummer, which presents a brief summary of the life of William Heberden—a life full of the fine things that gives to the man of yesterday a prestige that has almost deified him in our profession—and a sketch of the times in which this man lived. Both of these are essential if we are to appreciate an author or his works when they come down from other times, and too frequently omitted from such "nuggets."

The second part of the book is an original manuscript, published for the first time. The reading is "easy." One is given a clear insight into the mind of one of our past great. Nor is it entirely to be looked upon as an historical manuscript, for we find Dr. Heberden criticizing certain medical practices which are still subject to the same attacks, such as the indiscriminate acceptance of drugs and prescription without a proper knowledge of the pharmacological action.

There has been added to this little volume Dr. Heberden's original manuscript, "Some Account of a Disorder of the Breast"—in truth the first presentation on angina pectoris.

A volume presenting several hours of most interesting reading. B. I. GOLDEN, M.D.

Surgical Diseases of Children

By Samuel W. Kelly, M.D., LL.D., F.A.C.S. Published in two volumes by C. V. Mosby & Co., St. Louis, Mo.

Dr. Kelly's work is unique. The two volumes constitute a complete textbook covering the various surgical conditions as they apply to children. The chapters on surgical pathology of the developing period and on fractures will be of especial interest to the pediatrician, to the general practitioner, and to the surgeon as well. Dr. Kelly rides no hobbies, but brings to his reader all that is best in modern surgical diagnosis and treatment. J. R. H.

OBITUARY

Charles O'Grady, M.D.

Dr. Charles O'Grady, sixty years of age, of Charleston, W. Va., died on the morning of July 31 following an operation at the Johns Hopkins Hospital in Baltimore, where he had been a patient for two weeks. Dr. O'Grady had been in ill health for a number of years prior to his death. Funeral services were held in Charleston on the afternoon of August 2, and interment was made in the family plot.

For more than thirty years the deceased practiced medicine in Charleston and Kanawha county, where he was widely known for his articles on scientific medicine, for his success as a practitioner, and for his genial and lovable personality. He was a member of the Kanawha Medical Society, the West Virginia State Medical Association, the Southern Medical Association, and the American Medical Association.

Dr. O'Grady was born in Galway, Ireland, and was brought to this country by his parents at the age of three months. He spent his early boyhood in Wheeling, later moving to Charleston with his family and entering the Kanawha Military Institute. Later he attended West Virginia University and Georgetown University, and was graduated in 1897 from the Kentucky School of Medicine at Louisville. He also received the degree of bachelor of science.

Dr. O'Grady was a member of the Sacred Heart Church at Charleston, and at one time served as grand knight of Charleston Council 771, Knights

of Columbus. During the World War he served as one of the medical examiners for recruits in the Charleston area. Ever strong in his sympathy for the Irish people, Dr. O'Grady was one of the organizers of the West Virginia branch of the American Association for the Recognition of the Irish Republic, of which he served for a time as state president.

Mrs. John N. Simpson

Mrs. Grace Donley Simpson, wife of Dr. John N. Simpson, dean of the West Virginia University school of medicine, died at her home in Morgantown on August 12, following an illness of more than six years' duration. Mrs. Simpson had been an invalid during the greater part of her illness, and had been in a critical condition since spring. She was born in Waynesburg, Pennsylvania, and was graduated from Waynesburg College in 1897. She was married to Dean Simpson in 1906.

Surviving are her husband and two children, John Simpson, a junior in West Virginia University, and Patricia, a junior in the Morgantown high school. Mrs. Simpson was well known throughout the state, especially to former university students, and with Dean Simpson had always taken an active part in university and faculty life on the campus at Morgantown.

PUBLIC HEALTH

Pamphlet on Syphilis

Because of the demand for the new pamphlet published by the United States Public Health Service, entitled, "The Management of Syphilis in General Practice," the bureau of venereal diseases of the State Department of Health has purchased a sufficient number for distribution to every member of the West Virginia State Medical Association. The popularity of the pamphlet is nationwide, as evidenced by the fact that the government has exhausted its original supply and has printed the second edition. Dr. Joseph Earle Moore, of Johns-Hopkins, is the author, and such authorities as Dr. John H. Stokes, Dr. J. F. Shamberg, Dr. Harold N. Cole, Dr. Udo Wile, and Dr. H. C. Solomon have collaborated in its preparation.

The controversial questions that frequently arise relative to the merits of various drugs and different methods of treatment are ably discussed, and the booklet is said to deserve a place in the library of every practitioner. At a later date a similar pamphlet on the treatment of gonorrhea will be released by the government health service and will also be distributed through the State Department of Health.

The physicians of West Virginia who do not receive copies of these pamphlets may do so by writing the bureau of venereal diseases of the State Department of Health, Charleston.

Mechanical Refrigeration

Several deaths which have occurred recently in Chicago have been attributed to poisoning by methyl chloride which leaked from refrigerating systems. These have received wide publicity, and have caused apprehension, even among the users of refrigerating equipment entirely unlike that to which the fatalities have been attributed. It is the purpose of this statement, authorized jointly by the Public Health Service, the Bureau of Standards, and the Bureau of Mines, to state the essential facts regarding this danger and to relieve any undue anxiety in the minds of those possessing household refrigerating systems.

All refrigerating systems in practical use depend for their operation upon the repeated gasification and condensation (sometimes by dissolving or "absorbing" in another substance) of a material which is technically called a "refrigerant." In most cases the refrigerant is confined under pressure in the refrigerating machine, and, if it escapes from the system, becomes a gas which mixes with the surrounding air.

For many years the gas ammonia was almost the only refrigerant used. For technical reasons, other refrigerants have more recently been introduced and are now extensively employed. Sulphur dioxide and methyl chloride are the most important of these.

None of the three refrigerants mentioned—ammonia, sulphur dioxide, or methyl chloride—can be breathed with impunity, but none are violent poisons when breathed for a short time in low concentrations. If the same amount of the three substances is considered, methyl chloride is the least poisonous of the three; but because their physiological effects are quite different it is hard to make a quantitative comparison. Sulphur dioxide and ammonia both have strong odors which are easily recognized and are so irritating that no one is likely to breathe much of them if escape is possible. Methyl chloride has a slight and rather pleasant odor, which probably would not awaken a sleeping person and might not be recognized by one who was awake. To this fact is to be attributed any greater hazard from methyl chloride than from other commonly used refrigerants

Most of the trouble attributed to methyl chloride has occurred in connection with multiple refrigerating systems installed in apartment houses, in which a single compressor delivers the refrigerant through tubes to the refrigerators in the several apartments. A large majority of the individual household refrigerators of the motor-driven (electric) type now in use employ sulphur dioxide as the refrigerant. Nearly all, if not all, of the domestic refrigerators, the operation of which depends upon supplying heat instead of mechanical compression, use ammonia. This class includes a few electric refrigerators of unusual type and all of the gas-fired refrigerators. The escape of the refrigerant from the more commonly used household refrigerating systems would, therefore, be at once made evident by its odor.

Newspaper headlines and statements to the effect that the fatalities in Chicago were caused by "gas refrigeration" without doubt had reference only to the fact that refrigerants are gases. Illuminating or fuel gas was in no way involved.

The high volatility of all practicable refrigerants makes it quite improbable that enough of these substances could be retained in food stored in the refrigerator to be harmful.

Methods for eliminating the danger from methyl chloride systems are being studied. It would be premature to say whether the end will be accomplished by replacing methyl chloride entirely by other refrigerants, by adding something which will give the refrigerant a sufficiently powerful odor, or by so improving the mechanical construction of the equipment that leakage will not occur where the gas might enter rooms in which people live.

It should be recognized that the number of serious accidents from household refrigerating systems has been small in comparison with the number of such systems in use, and improvements may be expected which will much reduce the hazard that does exist.

Dr. Murphy Appointed

The appointment of Dr. A. E. Murphy, of St. Marys, as director of the Raleigh County Health Unit, was recently announced by Dr. W. T. Henshaw, state health commissioner. Dr. Murphy will succeed Dr. J. S. Maxwell, who resigned to take up medical work in Africa. Dr. Maxwell has previously spent one year in the Sudan as a doctor of medicine. Dr. Murphy was formerly attached to the Rockefeller Foundation.

GENERAL NEWS

Proceedings of the House of Delegates at the Portland Session of the American Medical Association, July 8-12, 1929

The eightieth annual session of the American Medical Association was held in Portland, Oregon, July 8 to 12, 1929. The house of delegates convened at 10 A. M., July 8, and was called to order by the speaker, Dr. F. C. Warnshuis, of Michigan.

The minutes of the seventy-ninth annual session were approved as printed. The annual addresses of the speaker, the president, and the president-elect, were heard by the house and referred to the reference committee on reports of officers. These addresses appeared in the *Journal of the American Medical Association* for July 20, 1929. Reports of the board of trustees, of the secretary, of councils and of other standing committees were submitted to the house and referred to reference committees.

That part of the report of the board of trustees dealing with the need for a new building to house the activities of the association was referred to a special committee appointed by the speaker on authorization of the house.

Dr. William Allen Pusey, delegate from Illinois, submitted a resolution providing for the appointment of a committee by the board of trustees to direct the preparation and publication of a comprehensive history of the association. This resolution, having been referred to the board of trustees, was recommended for adoption and the recommendation was approved by the house of delegates.

Dr. William Allen Pusey, delegate from Illinois, presented a resolution providing that the judicial council of the association be asked to present to the house of delegates, at the annual meeting in 1930, a comprehensive statement for the guidance of the American Medical Association concerning the practice of medicine by corporations, by clinics, by philanthropic organizations, by industrial organizations, by demonstrations and by similar organizations, and concerning the relationship of physicians thereto. This resolution was considered by the house of delegates in executive session. The resolution was adopted.

Dr. J. Norman Henry, of Pennsylvania, submitted the report of a special committee appointed to study the need for the establishment of a home for needy physicians. This report was referred to the board of trustees and was recommended for adoption. After discussion by several delegates, the

recommendations of the board of trustees were approved and the report of the committee adopted. The report of the committee advised against the establishment by the Association of a home or homes for indigent physicians, and expressed the opinion that "it is not, nor should it be, a function of the American Medical Association, at this time, to undertake the care of indigent physicians in any way."

Dr. G. Henry Mundt, delegate from Illinois, submitted a resolution providing that when publishers of classified telephone directories impose a charge for listing the names of ethical physicians in such directories, component county medical societies of the American Medical Association be advised to discontinue such listings in classified directories. The reference committee on legislation and public relations, to which this resolution was referred, recommended the adoption of the resolution, and the recommendation of the reference committee was approved by the house of delegates.

Dr. Albert Soiland, delegate from California, submitted a resolution providing that the American Medical Association should endorse "the medical work of the Department of Commerce, its methods of physical examination and its method of selection of medical examiners, and urges that the same high standards be continued and offers the support of the American Medical Association in furthering the specialty of aviation medicine." This resolution, referred to the reference committee on hygiene and public health, was favorably reported and was adopted by the house of delegates.

Dr. J. W. Van Derslice, delegate from Illinois, submitted a resolution providing for the appointment by the board of trustees of a committee to study and report on the menaces to health and to life from carbon monoxide gas as a constituent of illuminating gas and as a by-product of the combustion of gasoline in automobiles; on the dangers of gases used in electrical refrigeration, and on steps necessary to be taken for the protection of the public. This resolution, referred to the reference committee on hygiene and public health, was adopted by the house.

Dr. James R. Bloss, delegate from West Virginia, presented a resolution providing that the council on medical education and hospitals be asked to investigate the present teaching of obstetrics in the United States and to seek readjustment of the curriculum so that hours allotted to the teaching of obstetrics be equal to those allotted to the teaching of surgery. The reference committee on medical education recommended the amendment of the resolution as presented by Dr. Bloss so that it would provide that the house of delegates request the council on medical education and hospitals to investigate the present teaching of obstetrics "and make such recommendations for increasing the clinical teaching hours of obstetrics as the results of its investigation may warrant." On motion of Dr. Mundt, of Illinois, seconded by Dr. Mongan of Massachusetts, the resolution was re-referred to the reference committee on medical education. At a later session this reference committee recommended the adoption of the following resolution:

> WHEREAS, The time allotted for the teaching of obstetrics in the curricula of the several medical schools has been cut down and is inadequate to drill the student thoroughly in this important major, be it
>
> RESOLVED, That the House of Delegates request the Council on Medical Education to investigate the present teaching of obstetrics in this country and make such recommendations for increasing the clinical teaching hours of obstetrics as the results of its investigations may warrant.

The resolution, as amended by the reference committee, was adopted by the house of delegates.

Dr. E. C. Thrash, delegate from Georgia, proposed the following amendment to the by-laws: Amend Chapter XIX of the by-laws by substituting the words "two thirds" for the words "three fourths," so as to permit the amendment of the by-laws of the association by a two-thirds vote of the house of delegates. On recommendation of the reference committee on amendments to the constitution and by-laws, the proposed amendment was adopted.

Dr. Burt R. Shurly, delegate from the section on laryngology, otology and rhinology, presented a resolution providing that, inasmuch as some hospitals, municipal and otherwise, have advertised in the daily press "and give given to the public stories of their special excellence and efficiency as compared with other hospitals," such advertisements be collected by the council on medical education and hospitals, and that the "question of hospital advertising be given due consideration and reported to the house of delegates at the next annual meeting and the rating of hospitals be affected according to the unethical advertising published."

The reference committee on medical education, to which this resolution was referred, recommended

the amendment of the resolution as introduced by Dr. Shurly so that it would read as follows:

> RESOLVED, That any physician observing such advertisements be requested to send them to the council on medical education and hospitals for its information and use in the rating of hospitals.

The resolution as amended was adopted.

Dr. Burt R. Shurly, delegation from the section on laryngology, otology and rhinology, submitted a resolution providing that the sum of $100 shall be paid to each section secretary in addition to the honorarium now paid, "to cover the actual expenses involved in the preparation of the program and the presentation of the same at the annual meeting." The board of trustees, to which this resolution was referred, reported that no statement had come to the attention of the board indicating that the honorarium now paid section secretaries is insufficient, and that the board of trustees stands ready to make necessary and proper adjustments. The report of the board of trustees was approved by the house of delegates.

Dr. Burt R. Shurly, delegation from the section on laryngology, otology and rhinology, submitted a resolution providing that the board of trustees be authorized to prepare a supplement to the *Journal*, in which papers read before sections and not accepted for regular publication in the *Journal* should appear. This resolution was reported unfavorably by the board of trustees, to whom it had been referred, and the house of delegates adopted the recommendation of the board.

Dr. Joseph F. Smith, delegate from Wisconsin, presented a resolution providing that the board of trustees be requested to have prepared by the council on physical therapy a digest setting forth the basic principles underlying the employment of physical agents and their mode of action on living tissue, and to publish this digest in a form which would be available to physicians. The board of trustees reported to the effect that a handbook of the kind provided for in the resolution is already in the course of preparation.

Dr. Frank Smithies, delegate from the section on gastroenterology and proctology, submitted a resolution providing that the board of trustees be directed to defray expenditures of delegates for transportation, housing and maintenance during attendance on each annual session. This resolution was referred to the board of trustees, which recommended that the resolution be not adopted. This recommendation was approved by the house of delegates.

Dr. T. O. Freeman, delegate from Illinois, submitted resolutions providing that the council on medical education and hospitals be ready to make a survey of the needs of smaller hospitals, to render all possible assistance to such institutions desirous of improving their system of records and their services to the public, and to offer its assistance to state registration departments to the end that such departments may secure such aid as they desire in connection with their classification of accredited hospitals. The reference committee on medical education, to which this resolution was referred, reported to the house of delegates that, in its opinion, the investigation begun several years ago and now being carried on by the council on medical education and hospitals would fulfill all the objects of the resolution, and that the reference committee believed that the council stands ready to give all possible assistance to small hospitals in solving their problems. The reference committee recommended that the resolution be not adopted, and this recommendation was approved by the house of delegates.

Dr. J. C. Litzenberg, delegate from Minnesota, submitted a resolution adopted by the Minnesota State Medical Association, disapproving the policy of the American Red Cross in officially authorizing Red Cross nurses to nurse patients under the care of cultists. The reference committee on legislation and public relations recommended that the American Medical Association disapprove any change in policy by the American Red Cross whereby the nurses of that organization would be available for service to patients under the care of cultists, and that the secretary of the association communicate with the proper officials of the American Red Cross and advise that organization of the attitude of the house of delegates. The recommendations of the reference committee were adopted.

The special committee, to which that part of the report of the board of trustees dealing with the need for a new building for housing the activities of the association was referred, expressed its conviction that it is desirable for the association to have a building "that would be visible evidence of the dignity, importance, and power of the association," and recommended that it should be left to the board of trustees to perfect plans for providing the building.

This committee also expressed the opinion that the subscription price of the *Journal* is now relatively greatly below the price of other journals that ap-

proximate it in extent and quality, and suggested that the board of trustees should consider the question of increasing the subscription of the *Journal*.

A third recommendation of the committee was to the effect that it would be appropriate for the board of trustees, in a building program, to solicit memorial contributions, both large and small, from members of the association. The committee expressed its conviction that as the association shows increased evidence of strength and permanence it will gradually become the recipient of an increasing number of memorial contributions.

The report of the special committee was adopted by the house of delegates.

Later in the proceedings, Dr. William Allen Pusey, delegate from Illinois, introduced a proposed amendment to the by-laws, providing that the subscription price of the *Journal* shall not exceed $8.00. This proposed amendment was adopted by the house, and the board of trustees is thereby authorized to increase the subscription price of the *Journal* to a sum not in excess of $8.00 a year.

Dr. E. J. Goodwin, delegate from Missouri, presented a resolution that had been adopted by the Missouri State Medical Association, providing that medical schools be encouraged to arrange for periods of practical experience for students with practitioners of high standing, preferably in rural communities, and that the council on medical education and hospitals be instructed to consider the plan proposed by the Missouri State Medical Association, and, if the plan is found to be feasible and beneficial, the council be urged to encourage medical schools to "inaugurate suitable methods for providing these vacation periods of practical experience for their students." The reference committee on medical education reported favorably on this resolution, and it was adopted by the house of delegates.

Dr. A. T. McCormack, delegate from Kentucky, submitted a resolution providing that "it is the sense of the American Medical Association that the determination of measures necessary for insuring the safety of milk for human consumption is a duty and function of the medical profession through the duly constituted public health officials of this country." The reference committee on hygiene and public health recommended the adoption of the resoultion and this recommendation was approved by the house of delegates.

Dr. H. C. Mallory, delegate from the United States Army, presented a resolution providing for the appointment by the board of trustees of a special permanent committee to be known as the committee on military affairs and national defense, to which shall be referred matters pertaining to national defense and military preparedness. The adoption of this resolution was recommended by the board of trustees and this recommendation was approved by the house of delegates.

Dr. Holman Taylor, delegate from Texas, introduced a resolution providing that the American Medical Association, through its house of delegates, go on record as heartily approving the National Defense Act of 1920. The reference committee on legislation and public relations reported the resolution favorably, and it was adopted.

Dr. Albert Soiland, delegate from California, submitted a resolution providing that the house of delegates record its opposition to the passage of a bill providing for increased tariff on surgical instruments, x-ray equipment, vacuum tubes, valve tubes, and scientific glassware. The board of trustees recommended the adoption of the resolution, and the house of delegates approved this recommendation.

Dr. H. C. Macatee, delegate from the District of Columbia, presented a resolution setting out that relatively few accidents occur because of defects of sight and hearing, and providing that the house of delegates "consider the advisability of amending the present standards of physical fitness of automotive operators, adopted by this association, by the adoption of standards of mental and moral fitness to be recommended for adoption by the several states as a condition for issuing licenses to operate motor vehicles, and that this resolution be referred to a special committee for consideration and report at the next annual session." The reference committee on hygiene and public health recommended the adoption of the resolution. On motion of Dr. G. Henry Mundt, delegate from Illinois, the resolution was amended by deleting a statement in the preamble to the effect that relatively few accidents occur because of defects of sight and hearing. The resolution as amended was adopted.

Dr. Tom B. Throckmorton, delegate from the section on nervous and mental diseases, submitted the following resolutions, which had been approved by that section:

> WHEREAS, The house of delegates of the American Medical Association has previously expressed its dissatisfaction with the present status of medical expert opinion evidence and has expressed its approval of the efforts of the

American Bar Association and of the various bar and medical societies to correct by remedial legislation and by changes in court procedure

Whereas, The American Psychiatric Association and the National Crime Commission are devoting much study to the subject of such evidence, particularly as relates to psychiatric matters in criminal cases, with a view to improving procedure; and,

Whereas, The criminal law section of the American Bar Association has appointed a committee to collaborate with a committee of the American Psychiatric Association in formulating plans for bringing about a betterment of the present undesirable situation; and,

Whereas, Such efforts are of vital interest and importance to the entire medical profession, be it therefore

RESOLVED, That the house of delegates of the American Medical Association express its continued interest in the correction of the abuse of medical expert opinion evidence, and that it offer to the American Bar Association, the American Psychiatric Association, and the National Crime Commission, the various state and county medical and bar associations, and such other reputable organizations as are actively pursuing efforts directed toward such correction, the assistance and coöperation of the American Medical Association in promoting the passage of appropriate legislation and in bringing about suitable changes in court procedure with reference to such evidence; and be it further

RESOLVED, That the house of delegates approves the principle of securing in the case of all capital charges and in the case of as many other criminal charges as the psychiatric facilities of the state will permit, an impartial and routine mental examination of the defendant in advance of the trial as a means of obviating the contentious introduction of partisan testimony, and that it approves further the principle of removing as far as possible the question of sanity from the trial itself, reserving the employment of psychiatric data for a post-trial inquiry to determine what treatment is appropriate to the convicted person; and be it further

RESOLVED, That a copy of this resolution be forwarded to the American Bar Association, the American Psychiatric Association, and the National Crime Commission.

On motion of Dr. Throckmorton, seconded by Dr. A. T. McCormack, delegate from Kentucky, and after discussion by various members of the house, these resolutions were adopted by the house of delegates.

Dr. F. W. Cregor, delegate from the section on dermatology and syphilology, submitted resolutions providing that treatment for hypertrichosis by the tricho system and by allied systems employing radiation be condemned as highly dangerous to the patient, and "that all cases presenting the effects of this type of treatment and seen by members of the medical profession be reported to the bureau of investigation of the American Medical Association." The resolutions were adopted.

The judicial council, in its report to the house of delegates, recommended that Section 3, Article VI, Chapter II of the Principles of Medical Ethics be amended by substituting the following:

> COMMISSIONS. Sec. 3.—When a patient is referred by one physician to another for consultation or for treatment, whether the physician in charge accompanies the patient or not, it is unethical to give or to receive a commission by whatever term it may be called or under any guise or pretext whatsoever.

This recommendation of the judicial council was adopted by the house of delegates, and the principles of medical ethics were so amended.

Dr. J. H. J. Upham, member of the board of trustees, presented a report from the Woman's Auxiliary to the house of delegates, submitted by its president, Mrs. Allen H. Bunce, of Atlanta, Georgia, and this message was accepted by the house and made a part of its records.

Election of Officers.—The following officers were elected:

President-elect—William Gerry Morgan, Washington, D. C.

Vice-President—Ernst A. Sommer, Portland, Oregon.

Secretary—Olin West, Chicago, Illinois.

Treasurer—Austin A. Hayden, Chicago, Illinois.

Speaker of the House of Delegates—F. C. Warnshuis, Grand Rapids, Michigan.

Vice-Speaker of the House of Delegates—Albert E. Bulson, Fort Wayne, Indiana.

Member of the Board of Trustees—D. Chester Brown, Danbury, Connecticut (reëlected).

Member of the Board of Trustees—Allen H.

Bunce, Atlanta, Georgia (to succeed E. H. Cary, Dallas, Texas).

The president, Dr. M. L. Harris, made the following nominations for standing committees:

Judicial Council—James B. Herrick, Chicago.

Council on Medical Education and Hospitals—M. W. Ireland, Surgeon General, U. S. Army; James S. McLester, Birmingham, Alabama.

Council on Scientific Assembly—Lewis H. McKinnie, Colorado Springs, Colorado.

These nominations by the president were confirmed by the house of delegates.

Dr. Josef Jadassohn, of Breslau, Germany, was nominated for honorary fellowship by the section on dermatology and syphilology, and this nomination was approved by the council on scientific assembly. Dr. Jadassohn was elected to honorary fellowship by the house of delegates.

Detroit, Michigan, was selected as the place for holding the next annual session of the American Medical Association, in 1930.

New Doctors Licensed

Twenty-six applicants for license to practice medicine in West Virginia passed the state medical examination held in Martinsburg and were granted license by the public health council, it was recently announced by the state health commissioner, Dr. W. T. Henshaw, secretary of the council. Eighteen of the applicants had graduated in June, the records revealed, and twelve had received their preliminary medical training at the West Virginia University. Seven doctors who had passed medical examinations in other states appeared before the public health council and were granted license through reciprocity.

Those passing the state medical examination were: Emmett Wesley Arnold, Sutton, W. Va.; Raymond Woodman Alvis, Newell, W. Va.; Harry C. Aitken, New York, N. Y.; Anthony V. Cadden, Hemphill, W. Va.; Howard Hampton Ballard, Peterstown, W. Va.; Francis A. Clark, Charleston, W. Va.; Leo E. Christian, Huntington, W. Va.; Flavius Carl Chandler, Hepzibah, W. Va.; Elijah Matthew Craighead, Kimball, W. Va.; Robert Deward Clark, Surveyor, W. Va.; Harry Leon Duncan, Moundsville, W. Va.; Dean Leonard Hosmer, Bluefield, W. Va.; Norvell Leonard Haislip, Wheeling, W. Va.; Leonard Iverson Hoke, Princeton, W. Va.; Tarring Whitfield Heironimus, Grafton, W. Va.; Linville Murrel Halloran, Hinton, W. Va.; Frank Jackson Holroyd, Princeton, W. Va.; Herbert Rudolph Hartwell, Quinwood, W. Va.; Edward Berkeley Neal, Richwood, W. Va.; Justus Courtland Pickett, Cleveland, Ohio; William J. Porter, Wayne, W. Va.; Reginald Samuel Rilling, Cleveland, Ohio; Joseph McBride Sloan, Huntington, W. Va.; Samuel Robert Wells, Martinsville, W. Va.; David Alexander Watkins, Chicago, Ill., and Bernard Waldo Wilkinson, Shinnston, W. Va.

The following were granted licenses through reciprocity: Francis Normer Andrews, Huntington, W. Va.; John Charlton Bigony, Hinton, W. Va.; Richard Booker Easley, Charleston, W. Va.; Ray Delbert Lattimer, Parkersburg, W. Va.; Daniel Oscar Nicholas, Slab Fork, W. Va.; Ward Wylie, White Sulphur Springs, W. Va., and Harry Montriville Andrew, Weston, W. Va.

Stuckert Film Available

The West Virginia State Medical Association has just purchased a new, up-to-date moving-picture projection machine for the use of all county societies that desire to show the Stuckert film on obstetrics at some meeting during the coming year. The Stuckert film, as has been announced, was recently purchased outright by the state department of health and has been offered to all county societies through the state association. With the purchase of the new projection machine the association now has a complete service available for county society use.

Approximately ten county societies over the state have already written in and scheduled a showing of the Stuckert film. Before the film was purchased a preview showing was held in the association offices in Charleston, at which time it was declared to be one of the best scientific films of its kind in America. The association felt the film would work in so well with the ordinary county society meeting that the purchase of the projector was authorized.

Every county society desiring to schedule the Stuckert film for one of their fall or winter programs should communicate with the executive secretary as soon as possible in order to avoid any conflict in dates.

Observations in 1848

We have recently had the pleasure of reading an old notebook written as bedside observation and didactic lectures by Dr. John B. Anderson during the year of his graduation at Jefferson Medical College, in 1848. Dr. Anderson was a native of Virginia and the father of Mrs. A. H. Brown, of Charleston, who kindly lent us this book. There

were 178 graduates in the class of 1848, one of whom was Dr. V. T. Churchman, father of our ex-president, Dr. V. T. Churchman, of Charleston. The notebook contains Dr. Churchman's thesis on differential diagnosis of typhus and typhoid fever.

Dr. Churchman has made a few abstracts, which will clearly show that if their opinions were not proven by laboratory and x-ray tests, they were in many cases excellent guesses. These abstracts appear below.

In case of hemiplegia, Dr. Wood advised that there was not much that could be done; but, in early cases, advised a blister on back of neck, keep bowels open freely, and restrict diet.

Dr. Mitchell, in case of palpitation of the heart following rheumatism, advised Pot. iod. gr. 2, spirits turpentine drops 10, and wine of colchicum drops 10 in water three times daily; keep in bed as much as possible.

Man with typhoid fever. Saw this case two days ago, when he was almost in a state of stupor. Tongue dry and pulse very frequent. Ordered a blister to his scalp, oil of turpentine every two hours, and a little milk, about a tablespoonful, every hour. Today is decidedly better; tongue moist, less stupor. Continue turpentine and diet.

Dr. Wood, in case of beginning pleurisy, advised small doses of tartar emetic every hour until nausea is produced, but avoid vomiting if possible.

Dr. Mitchell, in a case of dilatation of heart with possible hypertrophy, advised rest in bed and prescribed tr. digital, drams one, wine colch rad, drams seven, one-half teaspoonful twice daily.

Dr. Wood advised, in case of secondary syphilis with severe eruption, mercurials and increasing doses of Fowler's solution. After about two to four weeks put patient on Pot. iod., 5 to 10 grains, three times daily.

In a case of probable ramollesemont with distortion of the mind, Dr. Wood recommended a seton in back of neck and a tonic—cider and iron very good.

Dr. Wood.—Man has had intermittent fever; when brought in, had frequent pulse, tongue dryish, abdomen swollen and tender, liver and spleen enlarged. There seems to be some peritonitis. Treatment: Cup freely over abdomen, and poultices. Mercurial treatment, 2 grains calomel at bedtime, followed by seidlitz powder. Sedatives.

Dr. Dungleson.—Boy, nine years old; cough four weeks; has fallen off some. Diagnosis, chronic bronchitis. Butter, molasses, and vinegar, equal parts; stew together; take half tablespoonful when cough comes on. If cough is very troublesome, add five to ten drops paregoric to each dose. Tallow plaster to breast.

In the medical cases they seemed to have a decided leaning to blisters, wet cupping, calomel, and opiates. In chronic cases they were partial to setons.

Dr. Morris.—Boy with compound fracture of skull, more or less comatose, paralyzed on left side, pupils dilated, wound on right side. Treatment: Blister to back of neck; give mercurials freely.

Boy with mortification of arm from injury by machinery. It extended to shoulder joint, and in the axilla the main artery had been torn in two. Advised use of wine and quinine and morphine to relieve pain. Believed best to allow to separate partly by efforts of nature rather than remove at once.

Next case was one of ununited fracture from an unknown cause. Advised the use of blister over the seat of fracture.

Dr. Nutter.—Exhibited case of ligation of the femoral artery for aneurism on inner side of calf of leg. The tumor disappeared rapidly.

Another case exhibited was a child eight months old, operated on for double harelip by Dr. Pancoast. Child doing fine.

Dr. Pancoast.—In case of enlarged tonsils, advised first to use tr. myrrh, tr. catechu, and alum water, equal parts, for a few days, and then extirpate the gland if does get better.

In a case of erysipelas, Dr. Pancoast recommended: Take blood freely by cups; purge; put to bed; cover part with lead acetate water and laudanum; give a diaphoretic and sedatives. In a case of acute edema of hand, puncture freely to let out freely.

In a case of pterygium, operation should be done as soon as it begins to mount over border of the cornea. Divide just at edge of cornea and dissect vessels back, but not to the semi-lunar piece. Then tie a ligation around the vessels, cut off the part, and cauterize.

Dr. Morris.—A man with injury of hand. The little and ring fingers entirely removed, metacarpal bones exposed, sloughing. Apply flaxseed poultices and keep limb at rest.

Showed a case of gunshot wound in which much of soft parts were injured by wadding. A large slough has come away and the surface is covered over with healthy granulations. Has had poultices applied since injury and he is getting well.

In reviewing the surgical cases, I was impressed

by the fact that parts were thoroughly washed with soft soap and hot water before an operation. In acute injuries, they first aided nature by the use of poultices. C. A. R.

West Virginia Death Causes

Accidents still held the lead in causes of death in West Virginia in 1928, with heart disease a close second, pneumonia third, diseases of early infancy fourth, tuberculosis fifth, influenza sixth, and nephritis and cancer running a close race for seventh place. The total mortality for the state was 17,511. Of this number, 11,794 were native to the state, 4,405 were from other states, 869 were foreign-born, and the birthplaces of 143 were not given.

These figures, which were compiled by the division of vital statistics of the state health department, were assembled from certificates collected from all parts of the state by more than 400 registrars who report monthly to Dr. Carl F. Raver, state vital statistician.

The ten principal causes of death in West Virginia for 1928 were given as follows: Accidents, 1,711; heart disease, 1,504; pneumonia, 1,315; diseases of early infancy, 1,274; tuberculosis, 1,215; influenza, 1,063; nephritis, 1,059; cancer, 1,058; diarrhea and enteritis, 844; apoplexy, 789.

The Marmola Quackery

Edward D. Hayes has been quacking it for a quarter of a century. Using the trade name, "Marmola Company," he exploited a thyroid-containing mixture—Marmola. In 1926 the postal authorities were about to issue a fraud order against the Marmola Company when Hayes submitted an affidavit declaring that he would discontinue the Marmola business. He did so by changing the name of the Marmola Company to the Raladam Company! He continued to sell his nostrum through the drug stores instead of through the mails. Now the Federal Trade Commission has issued an "Order to Cease and Desist," the essential features of which are that the firm cease and desist from representing that Marmola is a scientific and accurate method for treating obesity; representing that the formula from which Marmola is made is a scientific formula, and representing that Marmola can be taken without the advice and direction of a competent medical authority as a safe and harmless remedy in the treatment of obesity.—*Journal A. M. A.*, May 4, 1929, p. 1541.

Prescription of Remedies

The Principles of Medical Ethics of the American Medical Association contains the following with regard to the prescribing of medicines: ". . . it is . . . unethical to prescribe or dispense secret medicines or other secret remedial agents, or manufacture or promote their use in any way." It contains no provisions holding it unethical to prescribe proprietary medicinal preparations of declared known composition. If physicians will limit their prescribing to the medicinal products included in the United States Pharmacopœia, the National Formulary, and New and Non-official Remedies, they may be confident that they are not prescribing secret remedies; they should be mindful, however, that the National Formulary contains many drugs and drug mixtures that are practically worthless, and that preparations in New and Non-official Remedies are new, and, though worthy of trial, are in some instances still more or less in the experimental stage. For a guide to prescribing, the Epitôme of the U. S. Pharmacopœia and National Formulary, and New and Non-official Remedies, are to be recommended.—*Journal A. M. A.*, May 18, 1929, p. 1697.

Tularemia in Game Birds

The question whether tularemia occurs as a natural infection of game birds has been the subject of recent scientific investigation and has been widely discussed in various publications relating to wild animal life.

The possibility that tularemia infection might be the causative factor in epidemics that affect native species of game birds in various sections of the United States has been suggested. If tularemia was so concerned, the matter appears to be one of some importance because of the resultant danger of human infection and as a possible factor in game bird abundance.

The results of the studies conducted so far by the United States Public Health Service have not been completed. However, it has been shown that quail are susceptible to the infection of tularemia and that they may suffer from the disease.

Two human cases of tularemia have been reported (one in North Carolina, the other in Tennessee), which indicate that the source of infection may have been quail. Although these studies are not yet completed, it is of importance that quail as a possibility of infection for tularemia be borne in mind.

The West Virginia Medical Journal

Directed and Edited by the Committee on Publication

[The Committee on Publication is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible]

JAMES R. BLOSS, *Editor-in-Chief* - - - - - - - - Huntington

ASSOCIATE EDITORS:

WALTER E. VEST, Huntington — HARRY M. HALL, Wheeling — J. HOWARD ANDERSON, Marytown — C. A. RAY, Charleston

MR. JOE W. SAVAGE, *Secretary-Business Manager*, Charleston

Entered as Second Class Matter, January 1, 1926, at the Postoffice at Charleston, West Virginia

Vol. XXV — OCTOBER, 1929 — No. 10

BILIARY TRACT INFECTION *

By JOHN B. DEAVER, M.D.
Philadelphia, Pa.

Infection of the biliary tract may involve any of the bile passages—the gallbladder, the liver, the large and the smaller bile ducts, the pancreas and its ducts (particularly the duct of Wirsung), the antrum and the papilla of Vater with the lymph vessels and nodes that carry infection to and from the tract. Like all other infections, those of the biliary tract may be acute or chronic. The latter are the more common, although this greater frequency is more apparent than real, since most chronic infections are residual processes of a previous acute process, the effects of which lead to chronicity, as seen in digestive disorders variously labeled indigestion, dyspepsia, biliousness, hyperacidity, gastritis, *et cetera.*

In discussing biliary tract infections in their order of frequency, we naturally begin with the most common one—the gallbladder. It is only recently that we have been able, clinically, to detect very early changes in the gallbladder; that is, by means of cholecystography. Before that time the surgeon's diagnoses, to a large extent, were made on what Moynihan aptly terms "inaugural symptoms of gallbladder dyspepsia." These symptoms consist mainly of epigastric discomfort or fullness after meals, belching gas, and of flatulence. Usually there is tenderness in the region of the gallbladder. This process may go on to a cholecystitis with or without gallstones. Sometimes the condition apparently yields to medical treatment—at least for a while—but, sooner or later, the patients find their way to the cholecystographer, the surgeon, and the operating table.

Investigations as well as observations at the operating table emphasize the infectious nature of gallbladder disease. Its early stages are seen in what is known as the strawberry gallbladder, now more accurately called cholesterosis. It oftentimes happens that operation in cases that clinically presented a train of symptoms pointing to biliary tract infection with gallstones fails to reveal any calculi and the gallbladder grossly shows very little change. But sections of the removed gallbladder show lipoid deposits in the tips of the villi against a red background of the congested mucosa; hence the name *strawberry gallbladder*, a condition that represents an early stage of chronic cholecystitis. The fact that in most of such cases cholecystectomy is followed by complete relief of symptoms sufficiently indicates that these patients have been spared the results of prolonged infectious cholecystitis. This means not only the local effects, which in all likelihood would have included formation of gallstones, but also remote effects such as disease of the joints and the heart muscle. There is every evidence at hand to show that the diseased gallbladder may act as a focus of

* Read before the West Virginia State Medical Association at Martinsburg, W. Va., on May 21, 1929.

COLLEGE OF PHYSICIANS
OF PHILADELPHIA

infection. We all know what trouble focal infection may cause. Although the infectious process in the gallbladder may be self-limited, I believe that, once infected, the gallbladder is never again normal. The effects of an acute inflammatory process will be an area of reduced resistance to the action of new infective bacteria constantly coming to the gallbladder from the liver.

In view of the increasing evidence of the rôle of the liver as the original distributor of the infection by way of the lymphatics to the gallbladder, it may be said that early gallbladder pathology really means early liver pathology.

Infection of the liver occurs as an acute or chronic cholangitis, a circumscribed or diffused hepatitis, cirrhosis, multiple and local abscess formation; the last named being much less frequent than the other conditions. Cholangitis is recognized by the large and often tender liver, jaundice of variable degree, malaise, some elevation of temperature, dark urine, and positive reaction to the Van den Bergh and icterus-index tests. In more acute cholangitis, in addition to severe pain, the result of common duct cholelithiasis, there are chills, sweats, and high temperature. The differentiation of hepatitis and biliary cirrhosis is definitely a surgical one, and even at operation there may be some doubt.

Multiple, small abscesses of the liver occur as a terminal condition in pylephlebitis, most often the result of appendicitis. I have seen quite a few cases, all of which ended fatally; also, this is occasionally seen in long-standing common duct cholelithiasis. It is not necessary to say that, with few exceptions, neither of these two conditions should occur. Early recognition and operation for the primary infection should prevent these sequelæ.

In solitary abscess of the liver the diagnosis, while always more or less difficult, is made by careful study of the history, the symptoms, fever, chills and sweats, localized tenderness, rigidity, and particularly by x-ray and fluoroscopic findings when made by the expert röntgenologist, and, in some instances, by aspiration.

Permit me to report a case of chronic cholangitis where recovery was least expected.

CASE.—Male, Italian, age 32, admitted to the Lankenau Clinic on December 12, 1928. Since 1918 has had sour and gaseous eructations. In 1928 had three attacks of severe pain in the epigastrium, lasting for a few hours, in one of which a hypodermic of morphine was given. In November, 1928, following a severe attack of epigastric pain, he became jaundiced. This was accompanied by nausea but no vomiting. The gaseous and sour eructations were more severe. The urine became dark in color and the stools light; the skin began to itch, which has increased in intensity. Physical examination showed marked jaundice, a much enlarged liver with its lower border rounded, smooth, tender, and firm, and a distended gallbladder—not large, by the way. Diagnosis: common duct obstruction by stone, and cholangitis. Five days after admission, December 17th, after the usual functional tests and usual preoperative treatment, the abdomen was opened. Operative findings: a much enlarged, firm, smooth liver; distended gallbladder with fatty and infiltrated walls adherent to duodenum and hepatic flexure of the colon; enlargement of the common duct up to the site of the stone, which was lodged in the upper portion of the pancreatic or third portion of the duct. The supraduodenal part of the duct was opened, the stone extracted, a flexible probe passed through the duct into the duodenum, and the gallbladder was then removed. A small catheter was then carried through the stump of the amputated cystic duct into the common duct for a short distance and anchored by suture to the stump of the cystic duct. The opening in the common duct was closed and a rubber drainage tube placed in the subhepatic fossa to the site of the suture in the duct. The abdominal wound was then closed. Drainage of bile was small and the patient was only partly relieved. On January 11, 1929, the wound was reopened and a T-tube introduced into the common duct. This was followed by a fairly free flow of bile and slow improvement. The liver showed little, if any, appreciable change in size. Diathermy was given throughout both operations, over the liver area, and after the operation, first on January 14th and daily thereafter until February 19th, the longest treatment being three hours. Bile drainage then increased and became very free. Steady improvement then set in. The patient was discharged on February 22d, with the wound healed and the T-tube *in situ*; the liver was practically normal in size, jaundice had cleared up, the heart tone was good, and the patient had gained several pounds in weight. The T-tube will be worn for several months at least.

I venture to say that no other form of treatment

than that described would have restored the patient to health.

One of the most difficult infections of the bile passages to handle is cholangitis. This may occur as either an acute or a chronic condition. The acute form, however, is less common than formerly, due to the fact that with the introduction of cholecystography and improved x-ray technique, surgery of the biliary tract is more common than formerly, and has revealed chronic infection of the biliary passages, chronic cholangitis, *et cetera*, as clinical entities. As in the case of the gallbladder, the infection may be carried through the blood stream, the lymphatic stream, and by way of the ducts.

Very pronounced cholangitis is more often seen following common duct involvement, usually a calculous obstruction. This is evidenced by chills, fever, jaundice, more or less variable, b ythe color of the urine and of the stools, and palpable enlargement of the liver. Formerly, when malaria was more commonly seen than it is today, these cases were so diagnosed and the real condition was missed more often than not. If at present the diagnosis is more often correctly made, it is in some measure due to the Van den Bergh and icterus index tests; but, at the same time, the clinician of large experience can usually gauge the situation by the ordinary clinical examination. This is not an argument against making use of every available means to insure a correct diagnosis of cholangitis, which, from the patient's point of view, is very important, as the treatment is purely surgical.

A mild, painless cholangitis occasionally occurs after cholecystectomy, where the patient had not previous been jaundiced. This diagnosis is made by the presence of jaundice, occurring a few days after the removal of the gallbladder, enlargement of the liver, feeling of malaise, slight fever, dark urine and absence of bile from the stools, and, occasionally, nausea. The cause of this postoperative condition can not always be determined. It is not due to duct injury, but is probably the result of the trauma of the operation that temporarily disturbs liver function, just as in the jaundice that occurs after fright or grief. The relationship of nervous shock to the sudden appearance of jaundice is readily explained by the relative position of the liver to the great sympathetic solar plexus and by the fact that every hepatic cell has an individual terminal nerve fibre. This jaundice may also be accounted for by the reparatory process with edema of the walls of the hepatic and common ducts, causing a temporary obstruction of the ducts and slowing up of the bile flow; also by the disturbance to the flow of the lymph stream, the result of division of the lymph vessels between the liver and the gallbladder. Manipulation of the liver, gallbladder, *et cetera*, in making the operation, may cause spread of the infection and a mild cholangitis results. This can be likened to massage of the carcinomatous breast which favors metastasis.

We know that jaundice is the exception in gallbladder disease, while it is the rule in stone, stricture or neoplasm, *et cetera*, of the common duct; in fact, anything that obstructs the duct from within or without.

Jaundice without pain or fever, occurring a few days after the removal of the gallbladder, naturally raises the question of common or hepatic duct injury. In these cases the jaundice becomes deeper each day until the patient is bronzed, resembling the jaundice of common duct obstruction as seen in carcinoma of the head of the pancreas, and is likewise associated with itching of the skin. Another explanation of jaundice after removal of the gallbladder is that the bile ducts dilate and there is frequently bile incontinence that favors ascending infection.

In the mild cases of cholangitis, if the papilla of Vater is not at fault (by which I mean if it is sufficiently patulous), the Lyon method of medical drainage is worth a trial; the question is whether this treatment, if persisted in for any length of time, may not lead to infection of other parts by way of the lymph stream and the ducts of the pancreas.

In so-called catarrhal jaundice, there is a mild form of cholangitis due to backing up of bile from obstruction of the papilla of Vater consequent upon the inflammation of the walls of the duodenum at the site of the papilla. This cholangitis is self-limited and usually clears up in a few weeks. Nevertheless, I have had occasion to drain the common duct where such a cholangitis did not clear up and was leading to permanent damage of the liver. Therefore, a mildly infective catarrhal jaundice should not be considered too lightly, and certainly, when persisting longer than the average length of time, calls for surgical interference if the best interests of the patient are to be considered. Furthermore, chronic cholangitis resulting from a chronic calculous cholecystitis associated with stone in the common duct is a very rebellious condition, and anything approaching a permanent cure can be obtained only by removal of the stone or stones and prolonged T-tube drainage of the common duct. I

always have a few patients on my list who are wearing these tubes. I have had patients wear these tubes as long as four and more years. When these cases have reached a certain stage, medicines for relief are futile. My experience, in these cases, has been large; therefore, I am in a position to speak authoritatively. This is equally true of obstruction of the common and the hepatic ducts and their radicles by muddy, sandy bile. For this latter condition I have operated as many as three times on the same patient by draining the common duct, the hepatic duct and its primary branches, after emptying the ducts by scoop and irrigation. The patient finally remained well.

Chronic, recurrent cholangitis, moreover, may lead to permanent dilatation of the smaller bile radicles and thinning of their walls—and, ultimately, to pericholangitis and interstitial hepatitis.

I can not too strongly emphasize the importance of surgical treatment of these conditions and at the same time question medical treatment. Medical measures are merely palliative. I make this statement with all due respect to the therapeutic and physiologic action of the usual drugs given in these conditions, as well as to the different kinds of bath and light treatments and their accessories.

Acute cholangitis presents an entirely different picture, namely: jaundice, chills, high fever, and profuse sweats. Furthermore, the patient looks sicker and is sicker than the chronic cholangitic patient. If it results as a sequel of calculous obstruction of the common duct or multiple small stones in the smaller bile ducts, pain will be a prominent symptom; but, otherwise, cholangitic jaundice is painless—an important fact to be borne in mind. To get these patients well calls for a combination of surgical and medical measures, but chiefly surgical, especially drainage, either by way of the gallbladder or the common duct.

Internal biliary drainage through a cholecystogastrostomy or cholecysto-duodenostomy is not as satisfactory for one or more reasons, namely: as time goes on, the new opening contracts and sooner or later closes, except in the presence of permanent obstruction of the common duct. Only continuous external drainage of the gallbladder for a long time will perhaps prevent the formation of stone; therefore, barring the increased risk, argues for common duct drainage. Increased risk of common duct drainage is abolished if operation is made early, when the topography has not been befogged by long existing pathology.

Enlargement of the peri-pancreatic lymph nodes and enlargement of the head of the pancreas, in biliary tract infection, is not a very uncommon finding at operation. I never fail to call attention to this as well as to dwell upon its significance as evidence of the results of extension of the pathology caused by the infection.

This finding is one of the arguments in favor of earlier operation than is usually advised. Recovery from late operation made for one or other variety of biliary infection, like late operation (say, for cancer of the breast, where metastasis has occurred), must be expected to be followed by recurrence of symptoms, morbidity, *et cetera.*

This question of recurrence of symptoms is frequently cited as an example of the failure of surgery and in favor of continuance of medical treatmen To ignore the information gained in the study of pathology of the living with the many diverse conditions this study clearly shows, is illogical, unphilosophical, unreasonable, and befogs the atmosphere for him who is seeking the truth. Further, it is disappointing to one who is trying to reveal the hidden secrets that can not be unfolded, as I see it, in any other way than by sight, careful dissection, and touch. This can be likened to the difference between a gross and a tissue pathologist; the former only having a rough grasp of the situation, while the latter reveals the intricacies of the situation.

The peri-pancreatic lymph nodes in the gastrohepatic omentum and around the pancreas, when enlarged, are readily seen and excite the wonder of any one who has not before seen how prominently they stand out; in fact, they bear some resemblance to a Hodgkin's gland when laid bare. This, to say the least, is certainly an omen of some importance. Were the lymph vessels laid bare, they, too, would harmonize with the glands; therefore, again must we be mindful of their power to carry and spread infection.

To revert for a moment to the anatomy of the lymphatics of the pancreas, we learn they are numerous, consisting of four sets—an upper, lower, a right, and a left set. It will interest you, I am sure, to know of work done in the Lankenau Research Labroatory under the guidance of our director and pathologist, Dr. Stanley Reimann, upon the lymphatic distribution around the gallbladder, liver, duodenum, and pancreas.

In rabbits and dogs, the lymphatic distribution around the gallbladder was demonstrated in the following ways: The common duct was very care-

fully ligated close to its entrance into the duodenal wall, care being taken not to include the fascia around the duct because it contains many lymphatics. The needle of a small hypodermic syringe was then introduced into the fundus of the gallbladder, a small amount of bile withdrawn and replaced by a dilute suspension of India ink. A series of animals so treated and examined, at intervals of one day to a week, brought out the completed picture.

Second: A small, longitudinal incision was made into the common duct close to the duodenum and a glass cannula was tied in, directed toward the liver. The cannula was connected to a vessel containing normal salt solution stained with phenolsulphonephthalein. This vessel was then raised until a pressure of about two hundred milliliters of water was exerted inside of the duct-gallbladder system. The gallbladder absorbs fluid quite rapidly. Many of the larger lymphatics became quite prominent and their direction was easily traced.

By methods such as these, it is found that the gallbladder is in communication through its lymphatics with the lymphatics of the liver in the bed of the gallbladder. Since these lymphatics in the liver communicate with the remainder of the liver lymphatics through the portal spaces, the India ink may be carried great distances into the liver, even to appearing underneath the capsule of the dome of the liver. Other lymphatics pick up the India ink and carry it in the capsule of the liver toward the dome. The heaviest lymphatics are in the bed of the gallbladder, the second most numerous set course down the cystic duct to its junction with the hepatic duct and thence down the common duct to the duodenum, where some particles are carried in the serous coat of the duodenum in all directions. Others then appear around the head of the pancreas and finally in the parenchyma in that part of the pancreas, very few, if any, particles being carried beyond its head. From this point drainage is posterior to the retroperitoneal nodes. In favorable cases some drainage is then carried upward and then through the diaphragm along the vertebral column. A small amount also descends along the vertebral column, mostly on the right side.

The normal flow, then, from the gallbladder downward, is in the direction of the common duct, duodenum, and head of the pancreas; but reversal of lymph flow occurs quite readily. Every experienced pathologist is familiar with this in its gross aspects in carcinomatous infiltration and its finer aspects in certain infections.

The question of whether or not cirrhosis of the head of the pancreas can be lymph borne has been answered positively by the discovery and report of a case presented in *Excursions into Surgical Subjects*, by Deaver and Reimann. The patient there described died of other causes, but was found at autopsy to have hardening of the head of the pancreas alone. Chronic cholecystitis with stones was also present. The arrangement of the ducts in this case precluded the ascent of infection from the common duct up to the pancreatic ducts, for the pancreatic ducts opened separately into the duodenum and not into the common duct or into the papilla, as do the majority of these ducts. This one case establishes, once and for all, the possibility of lymph-borne infection from the gallbladder to the head of the pancreas.

In early enlargement, the head of the pancreas is comparatively soft in contrast with the findings at a later stage. These findings influence prognosis. Enlargement of the body as well as of the head of the pancreas is not encountered nearly so often. This, as I figure it, is due to the two paths by way of which the pancreas becomes affected, namely: the lymphatic route and that by way of the duct of Wirsung. This is borne out in our operative findings, inasmuch as in infection of the liver and the gallbladder the head alone is usually the portion of the pancreas found involved, while in common duct infection hardening of the head and the body of the pancreas is a more likely finding. As I take it, this points to the duct of Wirsung as the pathway of invasion. The latter raises the question of the factors played by the antrum and the papilla of Vater. In common duct cholelithiasis and choledochitis, a not infrequent finding is partial, and in some instances practically complete, occlusion of the papilla of Vater, as demonstrated by the difficulty in carrying any but the tiniest probe through it into the duodenum by way of the opening made in the duct for the extraction of a stone or stones or muddy, gritty bile, and for the introduction of the T-drainage tube. This I have referred to in previous discussions as evidencing stricture of the papilla of Vater due to inflammatory edema perhaps of both the antrum and the papilla. My friend, Dr. Archibald of Montreal, has recently read a paper upon edema of the pancreas before the Philadelphia Academy of Surgery. May not this and the condition I am describing have something in common?

I have already referred to enlargement of the lymph nodes along the common duct. We meet

with these nodes slightly and very much enlarged, especially the node at the junction of the terminal first portion of the duct and the duodenum. I have seen the latter so markedly enlarged as to make it a probable factor in at least partly obstructing the bile flow through the duct.

I feel, from what I have said, that you will agree with me that biliary tract infection has many possibilities; therefore, its proper treatment is of great moment. If this discussion has been at all enlightening, I shall be much gratified.

Discussion

DR. HARRY G. TONKIN (Martinsburg): I would like to know from Dr. Deaver if he has not noticed, since the "flu" epidemic of 1918, that the biliary tract infections have been more pronounced, and that there are more cases of biliary tract infection since that epidemic? Aren't there more cases of gallbladder infection since 1918?

DR. JOHN DEAVER: In answer to Dr. Tonkin, I think he is quite right about that. That was forcibly brought to my mind by the late Dr. J. M. DeCosta—not that he lived through the terrible "flu" epidemic, because he died before; but he used to discuss with me the influence that the grippe had had on both appendix and gallbladder conditions. He was a famous internist with whose name most of you are familiar.

DR. WALTER E. VEST (Huntington): Of course, a common internist can't discuss such a surgical paper as this, except in generalities. I want to thank Dr. Deaver for coming here and giving us this paper. It was the best discussion of the gallbladder I have ever had the privilege of hearing. It comes nearer to meeting, to my idea, the requirements that we ought to have for our scientific understanding of biliary drainage than anything I have ever heard.

I want to ask Dr. Deaver a question, and that is this: He spoke in his paper about keeping the tube in for drainage. I don't believe he said exactly how long he keeps the tube drainage in for biliary sand. What I want him to make clear to us is what are his criteria for the removal of the drainage in cases of biliary sand.

DR. JOHN DEAVER: I am governed entirely by how the patient feels, by the absence of vicious organisms from the bile. I have smears made from the bile, and, of course, we try to prevent contamination from the outside, from mixed infection. It is governed by how well the patient tolerates closing off the tube all night. After they have worn these tubes for three or four or five months, it is closed off at intervals of half an hour or an hour during the day so all the bile will go into the intestines. Then that interval is increased until they go to bed at night. Tie a string around it or clamp it, and if they sleep all right and are comfortable in a few weeks after that, I take the tube out. Such patients must be subjected to these tests; otherwise, if all the inflammatory infection or condition hasn't subsided, there is likely to be a fistula—not permanent, but for some little length of time.

What I said about the medical side was joking. I like to get a rise out of the medical boys, you know. They have just as much of a place in liver disease as we have. We have no business, for example, delving into portal cirrhosis and that sort of stuff; that belongs to the medical man. We can't do anything with acute conditions of the liver. Those belong to the medical man, as do other conditions. But I do think, if drainage were established in these chronic cases, or cases that are becoming chronic, we would get better results. The only possible way to determine that is by opening, looking, and feeling. All the various tests and so forth will not measure it. When I hear all these scientific discussions, I think we are still in the fable age, which holds good in science; but the real, true test is the eating of the pudding.

DR. ROBERT KING BUFORD (Charleston): Professor Deaver has covered the subject of biliary tract infection so thoroughly that he leaves nothing to be discussed. I would like to emphasize one point that he has repeatedly stressed in his clinic and literature: that we are dealing with a pan infection. We find, in our clinic, gallbladder disease associated with infected appendices in sixty-five per cent of our patients. In men with duodenal ulcer, we find the same associations with an infected appendix. Contrary to what has been written recently by one of the surgical associates of the Hopkins clinic, I still believe with Arnsperger and Dr. Deaver that pancreatitis is a very frequent complication of biliary tract infection and that the lymphatic system is one of the most frequent portals of entry.

The celebrated Englishman, Sir Berkeley Moynihan, has emphasized from time to time that gallstones are tombstones to dead bacteria. Gallbladder disease may start at an early age in life. I have seen acute cholecystitis as early as eight years of age. One of Dr. Deaver's former associates, Dr. Pieffer, operated on a patient in Philadelphia a few years ago who was eight years of age. Gallstones are

sequellæ complicating bile-tract infections. Every case that comes to operation gives a history of gastric distress sometimes as long as 15 to 20 years. Those cases that do not respond to surgery are due to medical procrastination. Permanent damage has been done to the liver cells, and they can not stage a comeback.

I was very glad to hear him emphasize the importance of T-tubes. In ninety per cent of the surgical clinics in the country today you will not find a T-tube in their operating room paraphernalia. I I would like to ask what diagnostic criteria he uses when exploring the gallbladder. We find, in the early diagnosis of gallbladder disease, we are getting them earlier than ever before and seeing comparatively few stones. More of them are infections. If the abdomen is open we have more difficulty in determining whether we are dealing with an infected gallbladder in spite of an atypical history. We have paid a great deal of attention to the color of the gallbladder, keeping in mind that a normal gallbladder is an olive green color. Any deviation from that color we think is worthy of note. Also, the enlargements of gastrohepatic lymph nodes.

I would like to ask what dependence he puts on the cholecystogram in diagnosis. We find fifteen to twenty per cent of our cases have diseased gallbladder in spite of negative Graham-Cole tests.

DR. JOHN DEAVER: Our indications of gallbladder disease are such as Dr. Buford described, plus infiltration of the walls and plus the loss of recovery from manipulation. You can manipulate a gallbladder that is chronically diseased and try to empty its contents. You may empty some of the contents, but the wall wrinkles a little and doesn't come back like an india-rubber ball when you throw it down and it rebounds. I am in the habit of saying to the students (I teach undergraduates, but I say this particularly to the graduate students of the school), "This gallbladder has lost its pep. It is weak in the knees. It is like Dempsey—weak in the knees. He couldn't stand up under those rounds. He got a little wobbly in the knees—and that is the way with the gallbladder." I lay great stress upon the enlargement of the duct of the so-called cystic gland at the base of the cystic duct. I could have gone into detail on that side, as we have records now of about 140 of our last gallbladders removed and have studied not only the walls but the cystic duct, the glands along the common duct, for the various infections, and we find lots above it. We don't find bugs in all that group. There are only fourteen cases where we got a bug out of the bile. Therefore, where does the duodenal tube come in?

DR. F. L. HUPP (Wheeling): There is one diagnostic point that has come under my observation within the last two weeks that I think is worthy of note. A woman of about forty years had all the symptoms of a pathological gallbladder. She had painful paroxysms that simulated at least the passing of gallstones. She had eructations and other stomach disturbances extending over a period of about five years, as was described so beautifully by Dr. Deaver this morning. In addition to that, she had a tumor about the size of an egg, precisley in the position of the gallbladder. The most natural thing in the world to infer or to assume was that there was a tumor of the gallbladder or it was a cholelithiasis. After the usual survey, the abdomen was opened and, much to our surprise, a large, polycystic kidney was found, with the upper pole tilted in such a way that it presented immediately over the gallbladder region. The gallbladder was found absolutely normal and it was not disturbed, but the large, polycystic tumor was skillfully removed by Dr. Fulton. I would like to ask Dr. Deaver if this diagnostic point has come under his observation.

Dr. Deaver commented on some of the surgical aspects of hepatic cirrhosis. A recent issue of the *Proceedings of The Mayo Clinic* gave an ingenious way of handling the portal hemorrhagic cases where the blood was leaking into the stomach or bowel from a ruptured esophageal varix, as we have all seen. They have gone in and ligated the engorged plexus or the venous trunk itself, thus arresting the bleeding.

DR. JOHN DEAVER: I failed to answer Dr. Buford, relative to the question of cholecystography. In our clinic, we only use that in questionable cases; where they give a definite history and where they have had a series of attacks of pain and had hypodermics or morphine. We don't bother with x-ray. In the questionable cases, where the diagnosis is questionable, we practice cholecystography and we give the dye only intravenously. We don't give it by mouth. We never have mishaps.

In answer to Dr. Hupp, I have seen this condition of affairs and would not always have diagnosed it beforehand; but, in all these cases where there is any question about the diagnosis, I have them cystoscoped and pyelographed, and in that way I make some diagnoses that otherwise would be failures. Of course, my cystoscopic friends make those examinations for me.

It is equally true in connection with stone. I have, upon more than one occasion, operated for gallbladder where the x-ray man said the stone was in the gallbladder on account of the intimacy of relationship, and subsequently I have taken the stone out of the pelvis of the kidney or the ureter. Of course, that is liable to occur in the interpretation of the picture, because they are dealing with shadows and here we are dealing with actualities when we use the human sight and the human touch.

DR. R. U. DRINKARD (Wheeling): About twelve months ago I had a stricture of the common duct and that stricture was at least half an inch in length. You couldn't get the finest-toothed probe through the duct. I opened up each end and put in a T-tube and the patient had no drainage of bile at all. That T-tube has been in twelve months and the patient is doing perfectly well. I think it is time to take it out.

DR. DEAVER: Have you closed it off to see how she gets along with the vertical lead closed off?

DR. DRINKARD: Oh, yes.

DR. DEAVER: Then I think you can take it out. Twelve months seems like a good while.

We had one patient in Philadelphia who wore a catheter for eleven years and never had anything but an ordinary cystitis. He died with the catheter inside—a rubber catheter. He had pneumonia. He never was able to pass a drop of urine for eleven years. If they can wear a catheter in a tract like a canal subjected to movement and irritation for eleven years, I think they could go pretty near that long with a tube in the common duct, provided the rubber itself did not deteriorate. There is the risk.

This gentleman had a new French catheter put in every ten days. He had it taken out every ten days and the urethra cleansed and washed out. Strange to say, that was all done by a nose specialist, and I congratulate the specialist.

PRIVATE PRACTICE OF PREVENTIVE MEDICINE *

By HAVEN EMERSON, M.D.
New York, N. Y.

The function of preventive medicine was very well described by Sir George Newman, the chief medical officer of England, in this way: that its object is to build a better tabernacle for the soul of man to inhabit. That is rather a large order, and I think you will recognize that, in the spirit of that definition, we are going to go outside of the scope of administrative public health practice. It is in order to try to indicate to you what those of us who are in the teaching of public health in the schools feel about this that I selected the title which was offered, "The Private Practice of Preventive Medicine."

We have been through three quite definite eras of public health since the organization of such work in this continent. Probably the first official act of public health was enacted about the year 1678, when the selectmen of Boston required that the ships from Martinique that came to that harbor should not discharge their crews or their passengers, because of the fear of spreading smallpox in the community. That is, so far as we know, the first administrative act, and characterized the era of authoritative public health; that is, from 1700, let us say, to 1900, public health or preventive medicine in this continent was a matter for law and authority. It consisted in the exercise of the police power. It was a matter for lawyers, for courts, for sanitary police, for health officers, acting as individual detectives of sanitary nuisances, to enforce.

There was very little in the way of what we think of nowadays as public health in those first 200 years. It was a problem of the environment almost exclusively. The control of water, of sewage disposal, of housing, and certain of the grosser sanitary nuisances created by industry and slaughter houses and all such things as that, were considered the job of the health officer; and in Connecticut, you may recall, the health officers were appointed by the judges of the probate court from among the people in the community who had a reputation for being successful prosecutors—persons who were successful in ferreting out somebody who had violated the law, and then using the power of the big stick and making that person behave.

Well, that was the spirit, I think, which was characteristic of the environmental or public health law period of public health in the United States. Then there came a decided change, which most of us have lived in and experienced. It began in 1900, when a small group of physicians in some of the larger cities seized upon three perfectly simple facts with regard to tuberculosis and said, "These facts are so important that everybody must know them." Those facts were, as you will recall, that tuberculosis is preventable, is curable, and is communicable, and they saw that there was no possible way of displacing tuberculosis from its first place in the list of causes of

---

* Read before the West Virginia State Medical Association at Martinsburg, W. Va., on May 23, 1929.

death simply on the practice of medical work, but simply by public health administrative practice. They realized that, until all the people all over the country knew that tuberculosis was communicable, no amount of sanitary control would get much in the way of favorable results, and they thought also that if people recognized that the disease was curable, if it was detected early, they would be more likely to come to the physician and get care, and that it would be preventable is the natural corollary of its being communicable.

So, from 1900 on, there was developed what all of us have recognized as a wonderfully successful campaign of education in the field of tuberculosis and all the accessory facts that contribute to it.

The preventability of tuberculosis, then, became the basis of the first move in the second era of public health. Remember the first era—environment and authority alone. The second era was based on what one might call popular information or instruction. They called it "public health education." I like to reserve the word *education* for something that is a little more systematic, a little more continuous, a little more thorough, than what we mean when we talk about the education of people in tuberculosis. It was public information.

The simple distribution of the facts of laboratory sciences, indicating that tuberculosis is a communicable, a preventable and a curable disease, was not at first accepted even by the medical profession; but, once it was expressed abroad throughout the country, we had one of those phenomenal changes in the practice of medicine.

The first tuberculosis clinic in this country was set up by Dr. James Alexander Miller at the Vanderbilt Clinic, and for at least ten years after that as the other tuberculosis clinics developed, all the patients who came to those clinics had active, advanced tuberculosis. There was no question of the diagnosis; it was marked on their faces. They were easily detected by the most crude kind of diagnostic procedures as being tuberculous.

Now, in some six hundred tuberculosis clinics in the United States, approximately seventy per cent of the people who come to those clinics are non-tuberculous. That is the concrete result of popular instruction. That has taught people that, if tuberculosis is to be cured, it must be reached early—that people can not themselves subjectively detect their tuberculosis. Therefore, they go to the clinic or to the physician to find out whether, having been exposed, they have developed early stages of the disease.

Public information, then, began in 1900 with the tuberculosis campaign, and it was followed, as you will recall, by successive waves of propaganda for other kinds of health work.

Immediately following the tuberculosis campaign, came the campaign for the prevention of infant mortality, and, after that, for mental hygiene and social hygiene and cardiac diseases and cancer, so that people began to be somewhat confused as to whether they were going to be saved by a particular kind of public health campaign. First, they were told that all the world was dying of tuberculosis, and then that no babies would grow up because they all died in infancy, and then that heart disease was the greatest cause of death, and then, if we did survive heart disease, we would all die of cancer; and, after all, the campaigns were not altogether conducted in a judicious manner. But the effect of all this was to bring people to a conscious understanding of what was meant by preventive medicine to the health officer and to the private physician. I think you might call that the educational era of public health.

In 1922 we started on a new era, and it is that one that I want particularly to stress for you. In 1922 there were two very important meetings—one by the National Health Council, representing all the public health agencies, and the other by the American Medical Association in St. Louis. Those two agencies arrived at precisely the same conclusion and agreed to a common objective; that was that, in the future, the full benefits of preventive medicine could not be obtained unless people who were presumably in health got the benefit of definite medical examination and protection.

The periodic health examination was what was promoted by those two meetings—what was agreed upon as a program—and that is the basis of the modern or personal responsibility for public health. The object of that campaign was twofold: on the part of the medical association, to train physicians to be capable of making a competent health examination, and on the part of the health societies, as you know, to try to develop, in the public, an interest in making this contact with physicians.

Let us go back, for a moment, to the reasons why this unanimous opinion was agreed upon. I think it developed largely out of the experience of these several campaigns — tuberculosis, cancer, mental hygiene, child hygiene, prenatal care of expectant mothers, and all that. It was recognized that, no matter how perfectly you provided an administrative machinery, it was only going to reach a small frac-

tion of the people, and that, if you looked at the real kernel of each of the services that were being provided, it always came down to one specific fact: What did the whole tuberculosis campaign rest upon? It rested upon the competent physical examination of a person's lungs by a physician. What did the entire campaign for the prevention of infant mortality depend upon? It depended upon the examination of a little baby by a doctor at sufficiently frequent periods during its first year of life, so that the mother could be instructed how to bring that baby up. On what did the cancer campaign depend? It depended upon exactly the same thing—the examination of the individual by a physician. It was the same way with venereal disease. What is the crux of, let us say, the control of syphilis? It is the establishment of a place where expert diagnosis and perfect, quick, thorough treatment can be carried out for people who are infected, so as to diminish the communicable stage of the disease, to shorten the period of communicability, and to bring them to a condition of cure early instead of late. Of what does the mental hygiene campaign consist? It consists of a study of those minor disturbances of character and developments and conduct which threaten later psychoses and mental instability.

Recognizing each one of those things, the question came, How can we so incorporate into the practice of medicine, into the habit of people's conduct, a way of life which will bring results out of proportion to what we are getting with public health administration? I ask you to consider the simple matter of school inspection—the school health service.

At present, it is the habit of people in the United States generally to wait until a child goes to school, ignoring his defects that may be facing them day after day during the child's life, and when the child gets into the hands of the medical examiner at the school there will be a little slip sent back to the family, saying, "Your child is ten per cent or more underweight. It has half a dozen teeth that are badly carious. It has a mild degree of flatfoot. There are enlarged glands. It has refractive errors of the eye. It has poor posture and probably enlarged and septic tonsils."

That little bill of complaints is sent back to the family, and then somebody is paid to go to that family and try to teach the parents that they must take that child to a dentist and see that all these different defects are corrected. That is as backhanded and wasteful and unprofitable a way of handling the situation as you can possibly imagine, because it makes it suspected; it puts the emphasis of a responsibility for the child upon the mayor, the health officer, the school superintendent—a responsibility which is directly that of the parents of the child. If you ask parents whether they think the mayor is really more interested in their child, or the governor or the health officer, than they ought to be, they will feel rather affronted when you suggest that what they are doing is simply waiting for some hired officer of their government to detect the things in their child which have been facing them every morning at the breakfast table, day in and day out, for some years. They didn't need to wait until the child was six years old to find that it was going on with a variety of serious handicaps.

Similarly, when the mothers in these same families came to confinement, it was found that there were a multitude of hazards which they were facing at the time of delivery which could easily have been detected and prevented earlier, so that clinics were then set up for prenatal care of expectant mothers, and those clinics, after a large amount of laborious work and handling tens of thousands of patients coming through them, put up a little label on the wall and said, "We find the maternal mortality is reduced fifty per cent. The neonatal death rate of children is reduced from thirty-five to fifty per cent, and the stillbirth rate is reduced thirty-five per cent, simply by giving prenatal care to the expectant mother."

Who was responsible for that expectant mother? Was it the health officer? Was it the prenatal clinic? Was it the husband of the family, or should it have been the family physician?

It is that kind of experience, over and over again, at thousands of clinics all over the United States, that has convinced health officers, students and teachers of health in our medical schools that to continue on the present basis is not going to get us very far. Our business is to adjust people more perfectly to their environment. The function of the doctor is constantly to teach the people who seek his services to live more successfully under the conditions which their inheritance, their economic environment, their occupational possibilities permit them. It can never be loaded onto the health department as if it were something entirely apart from the practice of medicine.

So those of us who have been looking at this thing in a systematic way have been trying to develop, to build up, a picture of what we mean by the private practice of preventive medicine. It seems fantastic

at first, and yet I believe, as you look at it seriously, you will see that it is the basis for an entirely new and wholly appropriate practice of medicine on the physiological side rather than on the pathological side.

Let me suggest roughly the sequence of the contacts which are thought of by health groups as essential for the future development of preventive medicine in the United States. To begin with, let's take it chronologically—that the practice of preventive medicine begins as soon after the diagnosis of pregnancy as it is practicable to make contact with the mother; that not later than the fifth month of pregnancy the expectant mother should have a careful medical examination with a plan of living so carefully explained to her that she can not make any error in the ordinary conduct of her life. There is nothing so simple as teaching the hygiene of maternity, and yet perhaps you will think over your own records, over the last hundred or two hundred cases you have had, and find out how many of the mothers that came to confinement actually had been taught what kind of clothing, bathing, food, exercise, and rest were absolutely essential in order that they might arrive in a condition which would give them the maximum probability of survival and of the opportunity of nursing their child, through its first six months, at least.

How are you going to maintain that? After the examination is made, somebody must visit that mother—must see that mother—once a month, let us say. Nowadays, in our cities, we require that the visiting nurse carry with her, to make these follow-up visits, a blood-pressure machine, a simple urinalysis set and a stethoscope, so that she may be able to report to the physician whether or not there is a disturbance of blood-pressure by the ausculatory method, whether there is any presence of albumen or any marked change in the reaction or specific gravity of the urine, whether the mother has any of the symptoms which we recognize as disturbance of nutrition or toxemia. That is a charge which is essential upon the family in the interest of preventive medicine. It is not a burden of the public. It isn't a thing that the taxpayer ought to carry. It is a burden; it is part of the cost of having a healthy baby, and it costs less to have it done by a nurse serving one or more physicians, reporting to the doctor, than it does having that patient come to the physician's office.

That is the way organized maternity service in Denmark and in England has succeeded in reducing the maternal mortality rate to one half what it is in most parts of the United States. The original examination by the physician in a normal multipara need not be repeated if he can be assured, during the period of pregnancy, that there is some one competent to observe and report to him upon the process and progress of the pregnancy.

Not less than four or five times between the fifth month and the time of delivery there must be some contact between the patient and the physician who is going to be in charge of the delivery. If that is done through a maternity hospital, there must be a report to the physician who is going to be responsible at that time. "That," you say, "adds to the expense of delivery." It is adding to the expense of the delivery, but is diminishing the cost of funerals, and it is just a question of where you want to adjust the expense. We figured out in New York, not so many years ago, that it cost just exactly $25 to save a baby's life, and the cheapest funeral we could get on the lower East Side was $75. We felt that the adjustment was reasonable.

So, as to the expense of prenatal care, you say, "Why, these people can't pay our normal delivery service fee now; they can't pay the ten, fifteen or twenty-five dollars we charge as a cut rate perhaps for taking care of simply the delivery and a few postpartum calls. They can't possibly do this." Did you ever see anybody go on buying cheaper automobiles when there were better ones offered to them? Do you suppose people are really going to be so dumb that they don't notice the change in the standards of medical practice as they notice the change in the standards of housing, transportation, clothing, and food? Why, of course not! Why don't they get it; why don't they pay for it? Because the medical profession, as a group, is sound asleep at the switch; it isn't pressing or advising or assuring people that this is good practice of medicine and that they will not take any confinement case and be responsible for it unless they can give those people, the expectant mothers, the benefit of physiological guidance in their way of living. No surgeon will do an operation of choice unless he has had a chance to make a careful review of that patient's physical condition and watch him for a little bit, and put him through certain necessary digestive control, before he starts on the operation.

Here we have a planned surgical emergency, dated away ahead, and the outcome of that surgical emergency is determined by the way of physiological

existence of that mother during these nine months—these five months of prenatal life.

A few years ago we made a study among the larger cities of the country and found about six per cent of the mothers of the United States were receiving such prenatal supervision, and almost all of that supervision was being provided by public agencies, financed by philanthropic societies or institutions for people who didn't know enough to ask it for themselves but to whom it was offered at public expense. The demonstration of results of that philanthropic experiment has been shown; the demonstration has so improved families throughout the United States that now somewhere between twenty and thirty per cent of all the deliveries in our large cities are receiving prenatal care of at least three months' duration before the confinement. That is a minimum that will be considered reasonably adequate prenatal care. Perhaps you realize now that in many of our large cities seventy-five per cent of the births occur in hospitals, which merely indicates the extent to which the supervision of pregnancy is being tied up with suitable obstetrical care.

Recognizing, then, that part of the plan for the practice of preventive medicine is to inculcate in all the families with which you come in contact as private practitioners the absolute necessity in the interest of your credit, in the interest of the survival of the mother, in the interest of the nursing of the baby, that that mother should be under a fairly continuous physiological supervision from the time she knows she is pregnant until the time you say she is again free to carry on with that baby properly launched on its new career, from the moment the baby is born, let us take the next two years of life and see what we mean by the practice of preventive medicine at that time.

Every year or so I receive from some of our recent graduates a little card which is an indication of the way the wind is blowing. That card is from Dr. So-and-So, graduated in 1927 or 1928, pediatrician, practice limited to healthy children. Well, that seems like a dream to some of you who are saturated in sickness—who are simply jumping from one emergency to another, who are on the basis of medical practice of constantly having to make complicated diagnoses of situations which have been accumulating for years, coming in to see a child that you never have seen before in the depths of an urgent illness. These doctors are saying, "We are not interested in disease; we expect to apply the teaching of our physiology and anatomy, our knowledge of growth and nutrition and development, to rearing healthy babies; and we expect to demand that kind of practice, and if we specialize and demand that long enough, we will get people coming to us who want us to teach them health—want us to teach them how to rear their children."

The classical picture of the doctor with a barrel of tonsils on this side and a barrel of appendices on that side is now being replaced by the doctor who has a series of records of children who have been brought up through health instead of through disease. In other words, people are looking to a doctor who will take them around disease instead of going through it and over it—doctors who will be able to advise them how they can, with all human probability, avoid the great mass of those repeated wounds that strike small children because of unintelligence on the part of the mothers who bring them up.

The first practice of this kind that I ever saw in operation was in the hands of Dr. Langley Porter in San Francisco, who, five or six years ago, when I was there (he has since been made the dean of the medical school, I think, in the University of California), had 250 patients, all of them healthy babies, all of them reporting once a week, either by mail or in person, to his office.

When a new person came and said, "We have a baby; the baby is two months old; we would like you to help us make that baby a healthy life for this next year," he said, "All right; this is what I charge for taking care of the education of yourself and that baby for this first year. Here is a blank. Will you please fill out those facts about the baby?"

Then he sent an assistant or a nurse to see the place where that baby lived, how the room was arranged, how the crib was made, what was in the ice-box, where the milk was kept, what kind of soap was used, how the baby was dressed—all the details of that baby's routine and life—and then he got a specimen of the stools, he got the diet of that child as it was being arranged for, nursing and hours of it, and then he said, "Now, once a week, I will ask you to give me a few simple facts." They were what you would expect: the weight, the amount of sleep, the actual food intake, the number of bowel movements, and the amount of sunshine and exercise that the child had. It was arranged that, as long as that record satisfied the doctor, the mother knew what she was doing and was doing right by that child, he didn't have to have her come into the office. His profit, let us say, in terms of cold cash, came with

the intelligence with which he advised that mother. If he gave careless advice and the child became sick, then he had to carry that child through its sickness for what he had been paid for this contract, as it were. He lost on his time if he didn't use his physiological intelligence for protection. Those families had a feeling of loyalty and respect toward that physician which was quite equivalent to the respect and love they have for the person who has pulled their child through an apparently fatal illness by the skill and timeliness of his therapeutic care.

That kind of thing is going on now all over the United States, and it is going on chiefly in the hands of pediatricians or those who find themselves, by accident or otherwise, in charge mostly of children. The upbringing of healthy babies has developed into a fine art of medical practice. The physician who is trusted to see the little deviations from normal and the parents who recognize their duties to bring the child periodically to the doctor are having a relationship on an entirely new basis in the medical sciences.

I think you will agree with me that, in the past, physicians very rarely saw any person in their offices or at home in whom there was not some justifiable cause of complaint for fever, pain or disability. This group of people that I am speaking of are people who are not conscious in any way of being abnormal, of being in any way suffering or at a disadvantage, but they are coming to report the extent of their wellbeing to somebody who ought to be able to recognize that quicker than they do.

How often ought this to be done? Suppose we haven't got that excellent system I saw in Dr. Porter's office. We figure in our public baby stations, let's say, sixty thousand babies coming to the stations in the city of New York now, that each baby must be seen by a physician once every month for the first six months of life, and that at least six times in the next eighteen months is necessary—that is, twelve times in the first two years of life—when that child is going through its most rapid change in human development, extrauterine, it needs to be seen by a physician who can keep tab on this process of growth.

From the age of two to the age of five, what is known as the preschool period—the period in which and for which preschool clinics are springing up all over the country; the period during which they have what is called the summer round-up of children for medical examination before they go to school, when we have the maximum of deaths from diphtheria and whooping cough and measles and all the disturbances of nutrition—once or twice every year those children should be subjected to a careful medical consideration, and when I say a careful medical consideration I mean something a great deal more than is necessary in order to make a diagnosis of disease. It takes a great deal more time and, on the whole, more skill to make a thorough diagnosis of the degree of health than it does to make a diagnosis of a declared, established pathological condition with characteristic symptoms. So that this observation once every six months from the period of two to the period of five or six years of age means a conference between the physician and the mother and the child, at which the physician looks at that child's life as a continuing experience, looks at the child as going through a process of development and growth, both physical and mental, upon which its future health will depend.

When the child gets of school age, it is usually found that examination once a year is sufficient. What are we doing? What are we doing actually? In New York City, we have one doctor to every 13,000 school children. What parent is really going to be willing to accept one thirteen-thousandth of the time of a part-time school physician to determine whether that child is as well as it is capable of being? We know that the average length of time for good school inspection services is a ten-minute contact three times in the child's school career—ten minutes of a doctor's time three times in a child's school career. I don't know what you would say, yourselves, as to the necessary time to make a competent medical examination of a child of six or eight or ten, but I believe it is impossible to transfer into the understanding of the mother, into the coöperative interests of the child, what you have found about that child inside of about half an hour. In other words, if you have an intimate, close, continuing relationship with the mother and child, you can apply your educational process on the basis of a complete medical examination in perhaps half an hour, but you have got to work quickly, you have got to be in complete sympathy with the mother and child; you have got to deal with things with a very good technique, and you have got to have some things to put into her hands in the way of little printed directions, perhaps in the matter of diet where there has been an error of growth or development. In our schools at present we have, on the average, two minutes per child; in fact, that is not uncommonly called "a once-over above the

collar," and about sixty seconds per child is given in a great many school systems. That is an inspection; that is a glance; that is simply a little, brief glimpse at the errors that child is showing. It isn't a complete medical examination; it isn't a thorough medical service; and, if you want to have preventive medical practice, you can not trust it to the reputation which will be made by school inspection which is in the hands of people who are not allowed either the time or the conditions of examination which are adequate to learn the true inwardness of that child's life. The examination ought to be done under conditions which will permit real consideration of how the child is getting on with its school work, whether it is contented and happy, whether it has already developed some of those little peculiarities of personality which are going to hamper it in its adult years.

From the time the child is free from compulsory school regulation, let's say at sixteen or eighteen, on through the remainder of its adult life, up to forty-five years of age, let us say, the annual medical examination is proably a wholly justifiable and supportable expense—one case where wages can certainly be profitably invested in an opinion as to whether that person is leading the most rational life which medical guidance can provide. It will take, as they grow older, a little longer time, and probably forty-five minutes per person per annum is not too much to expect for the transfer of modern medical knowledge into the practice of the individual in daily life. We are constantly seeing the errors of nutritional practices, of dietary habits in our people. We know that there is this constant deficit in weight per height and age under the age of twenty-five, and the constant tendency toward excess after the age of forty-five. You know the old insurance saying that two years of a person's life expectancy is taken off for every inch that his waist line is bigger than his chest line after forty-five. You know that for every ten pounds that the person is overweight after forty-five there is a calculable abbreviation of their life expectancy, and that for every pound of underweight under twenty-five years of age there is also an increase in the hazard of tuberculosis or other diseases of mature years.

If you should count up these various medical exposures that I have suggested, you will find that, in the average life of a person sixty-five years of age, there will be approximately seventy or seventy-five opportunities for medical education of the individual; and until that method of medical practice is established the knowledge of the laboratories, the experiences of the hospitals and clinics, will not reach their full potential uses. We know so much more now than we are using that the problem comes of how we can put it into action, and I am certain that the tendency is more quickly, more seriously appreciated by the laity than it is by the physician. Most physicians are notoriously inattentive to the ordinary observance of hygienic practices in their own lives and those of their own families, and the public isn't going to be immensely impressed by advice from physicians unless they see physicians practice such procedures in their own families and in those people for whom they are directly responsible.

The public, as we see it (certainly in the northern part, along the Atlantic seaboard states), is now ready and eager, and asking, for preventive and protective medical service, and the medical profession almost everywhere appears to be resenting this push on the part of the public to make them do something which is not traditional with physicians. The parents of children are lying down, I might say, on the public services because they do not get support and encouragement from their private practitioners. There is no public health activity that I know of that hasn't resulted in a marked increase in the income of local physicians. Wherever good preventive medical services are offered to the poor for nothing, there is an increase in the interest of the people of moderate means and more in getting that same kind of service for themselves.

There is a boys' boarding school not far from Philadelphia, where they are providing preventive medical service which costs approximately forty dollars a year per boy, and the families that are sending their boys there are more satisfied at the economy of what is being provided for them. They get a two-hour examination by a highly trained internist and pediatrist when the boys enter the school. This is an expensive boarding school for boys, but the families are getting something there which they had been seeking for and hoping to have in the past. Suppose you start out and advise this kind of thing—advise this to your patients as the dentists for a generation have been advising people to come twice a year to get their teeth cleaned—what is going to be the reaction of your public? Some of them are going to react this way: They will say, "Doctor, all you are trying to do is make a hypochondriac of me. You are trying to make me think of myself or my sicknesses or what I might be having if I didn't do

anything else all the time. You will be ruining my morale. You will be tending to make me a neurasthenic by making me think of disease."

When a question of that kind is asked, I can't help going back into the history of cancer and tuberculosis and mental disease. It is fair to say the only kind of thing of which an American is afraid is ignorance, and ignorance of oneself is one of the worst abuses. We used to think that it was a kindness not to tell people if they had tuberculosis; now, a physician who didn't explain the whole thing to a patient would likely be sued for malpractice. We used to be considered poor form to be in a family in which there was a case of mental disease. Now, it is rather to the contrary. A person really isn't socially rangé unless there is at least one member of the family who has been psychoanalyzed. We used to be afraid to know, or have it known, that any person of our family had ever been in a tuberculosis sanatorium—and now think of the hundreds of thousands of people who have been through that postgraduate course in education in the way of right living! There are multitudes of persons now who are rather proud that they had courage enough to take their child with these little abnormalities of conduct and face a competent person and then say, "What am I going to do? How am I going to save that child from being a wreck?" Facing yourself, facing your family, with the evidence of mild deviations which haven't yet caused interference with their way of life, is an evidence of increasing courage on the part of the laity, and it is the business of the medical profession to encourage people to come to them to find out whether they have any hazards facing them—whether this little bit of a lump or spot or wart on their body is of any significance. They have courage enough to know whether this means anything to them; whether the shortness of breath, the little increase of rapidity of breathing and pulse on exertion, really means anything to them.

Just for a second, think of diabetes and of how dumb we have really been as a medical profession. We have seen thousands and thousands of patients going to insurance companies and having a slight amount of sugar detected in their urine, which caused them to be declined as risks. Then they have gone back to the doctor and asked what it was all about. There is no cause of death increasing so rapidly in the United States as diabetes. It is increasing more rapidly than any other cause of death is decreasing. There is now in New York at least one death from diabetes to every four from tuberculosis. It is the tenth in frequency of the causes of death in our large cities at present. That is not due to diagnosis or additional skill in treatment; it is simply that we are allowing our people to live a way of life which tends to increase all the hazards of imbalance between exertion and the necessary nourishment to provide for that exertion. Diabetics can, with almost insignificant changes in their ways of living, be so adjusted that this little disturbance of metabolism at the early stage is of no importance to them. When they get beyond that point, we are in one of the most difficult and complicated problems in the practice of medicine. People now expect to have their minds relieved of the possibility of their having a cardiac defect, a pulmonary defect, a modification of their arterial distribution, a condition of high pressure. They want to be relieved from the anxiety of their having perhaps the same kind of senile diabetes that their grandfathers had and which they saw causing so much trouble.

There are a great multitude of conditions which we speak of casually as the preclinical conditions of disease, for which the patient is incapable of making complaint but which the physician can detect before the condition becomes disabling. Remember this: The reason we are making headway with tuberculosis is that the physician with the x-ray and his auscultation can detect signs of pulmonary process before the patient is consciously complaining of any disability. The same thing is true with a multitude of other conditions in childhood and in adult life. If we have any confidence in our skill, in our diagnostic technique, it ought to be that we can detect, before the patient complains, most of the important preventable conditions of life; and if we satisfy ourselves with creating administrative machinery for the control of communicable diseases, and if we satisfy ourselves with administratively determining the quality of water, milk, and food, and environment and factory conditions, we shall gain only a small fraction of the potential benefits of preventive medicine. Preventive medicine is a great adventure in the application of physiology through the teaching by the physician of people from the beginning to the end of life. If we don't believe we can do that, we ought not to go out and we ought not to complain if other people in the medical profession take it on.

It doesn't take a great deal to teach highly educated women, teachers and nurses, how to pass on this kind of information; but I think you will find,

in every well-organized public or private health agency, the little phrase that this advice must in every instance be based on a careful medical examination and opinion, because I think it is not too much to say there are as many ways of being healthful as there are of being sick, and it is up to us to find for each one of our patients the particular ways of health which are suitable for that particular person. All people can not use the same amount of sleep or exercise or food; all people can not safely he allowed the same type of excitement or responsibility, and it is our husiness to learn what our human material can stand—not simply go off and wait until they have broken and then see what we can do to bring them back.

We are going to he held responsible for the preventive medicine of the future, whether we wish to or not, and if the medical profession doesn't take the leadership, it has no cause of complaint if the public organizes other services apart from the medical profession. The opportunity is yours; it is ours.

I practiced medicine for fifteen years continuously, in all kinds of hospitals, dispensary and private practice, and got infinite satisfaction and comfort out of it; but I could not see the opportunities of preventive medicine go by without trying to apply them. As I am teaching it in the medical school to our fourth-year medical students, year in and year out, I am convinced that the spirit of those going out of our medical schools is a sounder one than the spirit of twenty-five or thirty years ago, and the medical profession is being tried as never before by the public. I ask of you to think how you can organize and promote and teach and persuade in your community the practice of preventive medicine as a private undertaking. It gives infinite satisfaction. The obstetrician and the pediatrist, the psychiatrist, the mental hygiene teacher, are those who are making the greatest success. It remains for the internist, the general practitioner, the surgeon, to use their skill to avoid disease and not to depend upon the health department to do the whole job.

Discussion

DR. DAVID LITTLEJOHN (Charleston): I feel rather embarrassed to get up and make my appearance after the masterly address which we have heard from Dr. Emerson on this most important phase of all the work of the physician.

We realize now, I think (are beginning to realize, rather), that the practitioner of the future is going to be the practitioner of preventive medicine. There is no question in my mind in regard to that. The events of the last few years have been leading up to that in such a way that it leaves no question before us in regard to the truth of it. I was very glad, indeed, that Dr. Emerson emphasized the importance of this work to the general practitioner. By "general practitioner" I don't simply mean the man who takes care of every kind of disease, but I mean in all phases of practicing medicine, whether it be the pediatrician, the obstetrician, the gynecologist, the surgeon or the mental hygienist. These all must look upon the practice in the future from the preventive standpoint, because, as Dr. Emerson has said, if we do not, as a profession, undertake this, the people—the laity—are becoming educated to the point where they are going to demand it; and if we, as a profession, do not set the pace, do not lay out the program which is going to be followed, we are going to find ourselves in that rather embarrassing position where we are going to have a program formulated by the lay organizations which are interested in this work and we are going to have to follow the program which they have prepared. In other words, it will simply be a question of the tail wagging the dog, instead of the dog wagging the tail, and we are going to be the ones who will have to accept the program which has been prepared for us.

That isn't what we want. What we want to do is have the physicians get together and realize the importance of this and accept the responsibilities which evolve upon them. It is a responsible position which they occupy in the community. They are not merely there in the community for the purpose of obtaining a livelihood for themselves. That is merely a secondary consideration. They are there in the community in which they live as educators and for the purpose of contributing to the standards of that community so that the people in the community will be better equipped to do the duty which they are called upon to do in their respective places in that community. That is the position which the physician occupies. He is not there simply to receive the complaints of the individuals after they have ceased to he able to function properly in their respective places, hut he is primarily there, in our opinion, to keep the citizens of the community in which he is located in the condition in which they can be most valuable to the community and be real, actual assets to the community in the carrying on of the various functions to which they have been committed. So, for that reason, I feel that the message which Dr. Emerson has brought to us this morning is extremely

timely and it is one that we, as a profession in West Virginia, will, I hope, heed universally; and it is one which I think those who have been interested in the carrying on of this work in the state have been trying to impress not merely upon the public but also upon the physicians, that they are merely the intermediary agents in the carrying on of this work and getting coöperation between the laity and the profession. The laity are ready to accept the teachings which have been brought to them. It is up to the physician, to the medical profession, now to reach out and offer the services which the public are demanding, so that we must in the future be prepared to receive into our offices those who are seeking information in regard to the way in which they ought to live.

I think the ordinary, average physician who has been engaged in the practice of curative medicine must be a most profound optimist to be able to live and hear nothing but complaints from morning till night. He has had to endure that condition; he has simply been in the place of the automobile mechanic who takes the old, wrecked automobile that has been run over the bank and brought in to him to be readjusted. That has been the position which the physician in the past has, to a very large extent, been placed in. What we want the physician of the future to be in is the same position as the automobile agents are now—asking those who buy from them to bring their machines in regularly so that the conditions may be adjusted and that everything may be kept in shape, so they will be eliminating the possibility of adverse conditions developing.

We have a wonderful opportunity in that line, and I hope that the message which Dr. Emerson has brought to us this morning won't simply be like shedding water off a duck, but that we will take it home with us and digest it and not merely use it as a bath for the purpose of clearing off the dusty viewpoints which may have accumulated on our superficial surface, but we will use it and take it into our mental chamber, and that we will incubate it rather than anything else, and that from this will develop, in the professional spirit of the members of the West Virginia State Medical Association, a very coöperative spirit with the laity in the things that they are now demanding.

DR. R. H. PADEN (Charleston): It has indeed been a pleasure to hear Dr. Emerson's excellent address, and I might cite an experience or two that I have had since I have been with the state department of health to show you that the general public is now ready for preventive medicine.

As an experiment, we began last January traveling about the state, examining school children. We went to communities on invitation only, and in those communities where they do not have an organized, full-time health unit. Much to our surprise, when we made the announcement that we would be available, we were literally swamped with applications for our services. From January 18 until July 13 we are dated almost continuously for conferences. Many of these applications came through the farm women's clubs. As a rule, we were in each community from one to two days, usually two. In the first hour or two of the first day we usually had a small number of children, and then, after the word would get around how thoroughly the preschool children were being examined, we were busy for the remainder of the conference. In several instances it was impossible for us to examine all of the children at these conferences.

Now, what of the local physicians? We asked the organizers of these local conferences to invite the local physicians, and I might cite you an example of an occurrence in one of the counties, just to show you the reaction. The first morning of the conference one of the physicians of the community came in and helped us. He invited me to luncheon in a nearby town, saying, "I want you to meet the physician who will be out this afternoon." I went over to the luncheon, met this physician, and the doctor introduced me to him, saying, "Dr. Paden is in charge of the conference."

I always try to leave the impression that I do not want to be considered as being in charge; that the local people are in charge and we are simply there to help. He immediately came back at me in this way, saying, "Well, if you are in charge over there, there is no need of my coming over this afternon."

I explained matters to him and insisted that he come to the conference, to which he agreed. The physical record cards of preschool and school children were explained to him, but I could not get that physician to examine a child until we had examined six—three preschool and three school children. He said, "I am here to learn. I have never seen any of this work before. I don't want to do any work." But he started in after we had examined the six children, worked with us until five-thirty that evening, and asked permission to come back the next day and assist with the examinations, saying, "This is the most outstanding project that I have seen

carried on in this community since I have been a resident here. From now on, whenever you want to hold a child health conference in this community, I will be at your service from the time it begins until it is over."

Gentlemen, if we can secure the coöperation of all physicians of the West Virginia State Medical Association in carrying on this work, it is going to mean not only the satisfaction of knowing that you are leaders in preventive medicine, but it is also going to mean dollars and cents in every one of your pockets by the practice of not only curative but of preventive medicine.

DR. H. G. STEELE (Bluefield): I have before me a report of the births and deaths in West Virginia for 1928, and the maternal deaths. The stillbirths were 1,715. The total deaths under one year, exclusive of the stillbirths, were 3,228—a total of 4,943. Just think of that! Nearly 5,000 children die in West Virginia in one year and there is a maternal death of 246. I am now starting in this work of preventive medicine, in trying to do a little more scientific work in obstetrics. I wish we would all get together and try to cut down this percentage in West Virginia along this death line.

DR. JOHN THAMES (Charleston): I am greatly encouraged to know that the dawn is breaking and the clouds are clearing away as compared to what they were when I entered this splendid branch of the medical profession of preventive medicine. I thought I was right seven years ago, and now I am especially encouraged to continue.

DR. R. C. HOOD (Clarksburg): I have known of several progressive young men who have started this idea of caring for well children only. It is rather difficult to start a private educational campaign of this type, but I feel sure, with Dr. Emerson, that the time has come when we pediatricians can say on our windows and stationery, "Practice limited to healthy children only."

DR. W. J. MCDONALD (Wellsburg): It was indeed a treat to listen to Dr. Emerson, and, as Dr. Paden remarked to me a few minutes ago, the best thing we have had at the whole convention. It was very inspiring, and I wish to convey my sincere appreciation and thanks to Dr. Emerson.

DR. EMERSON (*closing the discussion*): I can only thank you for your very generous acceptance of my somewhat crude picture of what I believe will, in the future, be a clean-cut, thoroughly scientific type of medical practice.

I want to leave one concrete suggestion with you, in which I believe it is practicable for each one of you to participate. You know the medical press, the medical publications, are filled with records of people with different kinds of diseases, but nobody seems to be paying any attention to describing how it happened that a certain child was healthy. You do come across, if you are keen, one out of every so many children who is, so far as you can see, perfectly healthy, and the matter of immense interest to the future of public health is how in heaven's name they got that way. Why is it that one child has a perfect set of teeth? What did it eat? What did its mother have? What did it chew? What did it or didn't it do? Did it use a toothbrush? Did or didn't it use some kind of paste or powder? How was it? What were all the details surrounding this particular specimen of excellence?

If you have a child under your care whom you know is now, and has been at each of these periods of examination, a model—that is, that they have evaded sickness, avoided sickness, and they appear to be in perfect health—it is of the greatest importance to know what was done that achieved that. You will keep the most meticulous records as to how many units of antitoxin were used in diphtheria, how much insulin was used, how many doses of salvarsan in treatment; but have you any exact record of the kind of advice and the manner of living that resulted in these samples of healthy children? There is a doctor I know in Boston who has made a study of constipation—a most fascinating technical subject—and he has made his great success in treating that condition by studying people who are not constipated and finding out what are the practices which they found were successful, how it happened that they escaped having such a persistent and troublesome condition as constipation. So we have always been emphasizing the picture of disease in all our medical work. We must take the reverse side of the picture and describe health and how it is attained, and become as exact and thorough in our case histories of health, whether among school children or babies or adults, as we have been in describing the natural history of disease. Each one of us can do that. Each school inspector will have under his hands one child which appears to have an absolutely flawless existence. They have not had all kinds of disturbances; their muscle tone is good; their posture is first-rate; their weight and activity and alertness are all good; their teeth have come in in good order and have maintained their condition

well, in spite of all the kinds of hazards that the child encounters. How have they attained this health? It is a thing that is worthy of study. We are still, as I think I said before, saturated in sickness, and until we get ourselves out of that and make the study of the normal human body a part of our work, we shall miss some of our opportunities.

SOME MEDICAL PROBLEMS *

By C. H. HALL, M.D.
Elkins, W. Va.

In the early history of our nation, the medical man occupied a position of respect, confidence, and esteem in his community, and was looked upon as a man always ready to sacrifice himself for the comfort and relief of his patients, but was also looked upon as a man who allowed human sympathy to interfere with his own financial gains. However, it is possible that the reward of confidence and respect he received brought a greater sense of satisfaction and contentment than the greater financial reward received today, but which lacks the love of the people.

While the medical profession has, as a heritage, the highest place of honor accorded to any profession for service to humanity, still our members, being only human, are beginning to succumb to the virus of commercialism infecting our country until, I fear, we are beginning to fall from our high estate and are losing the respect and confidence of the public which, at one time, amounted almost to reverence.

The subsidence of this spirit of sacrificial service and high ethical consciousness toward our confrères is evidenced by such spectacles as the advertisement which blatantly proclaims that 20,769 physicians endorse a certain brand of cigarettes as being not only harmless but beneficial to the youth and womanhood of our land. What is the reason for the prostitution of our fair name in this manner? It is the fact that most of us received, *gratis*, a small carton of said cigarettes, with the implication that all the pay required was our endorsement.

We also hear of the man who tells his patient that it will require a very rare and special medicine for his case, and that it will be two or three days before it can be procured; then he directs his druggist to send, C.O.D., a few powders of disguised magnesium sulphate with a bill for five dollars, the excess above the druggist's charge to be turned over to the physician—and this after he has charged his patient a good, stiff office fee.

A certain number of men decide to form a group to facilitate the more efficient diagnosis and treatment of their patients, but this human greed presently begins to creep in until it soon amounts to a routine matter, where a patient with tonsillitis is shunted from one man to another with superability until, by the time he gets through, the disease has naturally subsided and the patient has a bill of $150 extracted from his pocket.

One or a number of overzealous individuals, in an effort to counteract this abuse, establish a free clinic, which is an incentive to the laity to stultify themselves and lose their self-respect in an effort to get something for nothing when they are abundantly able to pay.

All these abuses and others (and possibly some that are imaginary) have come to the attention of the laity, and the result is that a great deal of the trust and confidence that we formerly enjoyed is dissipated and our patients' allegiance is transferred to the patent-medicine fakir, the drug-store prescriber, the irregular practitioner, and the different cults whose constant activities are directed toward bringing about our further discredit.

I do not want to be understood as directing these criticisms toward the medical profession as a whole, for I believe that a very large majority are actuated by the highest ideals and I believe that this will ever be so; but we can not shut our eyes to the fact that these tendencies are creeping into our midst, and if these abuses are not checked by some conservative action, both legislative and professional, our prestige will be so impaired that eventually we will be engulfed by state medicine, which I believe is a consummation much to be deplored by all of us.

This trend of thought was given impetus by the very excellent address of our president at Martinsburg last May, and I hope that it may stimulate the profession to concentrated thought and effort, to the end that a solution of these problems may be formulated.

While the extremes of any question are not to be desired, still "the servant is worthy of his hire" and it is necessary that we receive an adequate compensation for our work in order that we may be free from financial cares to the degree that will allow us to give our best effort and thought to making the service we render worth while to our patients.

In adjusting anything in which there is conflict or difference in opinion, it is necessary to make some

* Read before the Barbour-Randolph-Tucker Medical Society at Elkins, W. Va., on July 25, 1929.

compromise; for, when any two forces are opposed, the position of both objects will be altered in an exact ratio to the power exerted; so, as our position is not impregnable and our power not supreme, it will be necessary to adjust our own actions and practices if we wish to escape the annihilation of our independent actions.

Some of us take contract practice and give it the least possible attention that is necessary to get by and draw our money, while others will give the very best there is in them and receive a pittance that is totally inadequate for the services rendered. Some of us are too mercenary, indulging in sharp practice that brings discredit to our profession; some of us are too lenient and easy-going, thus robbing ourselves of our just reward and engendering a disrespect on the part of the laity that leads them to impose upon us; but it seems to me that there is a middle or neutral ground, on which we might stand, that would mete out justice to all.

There has been built up, in this country, a mental attitude that demands that the physician lend his services in any case that calls him, whether it is remunerative or plain charity, thus demanding that the physician assume the entire burden of keeping the nation healthy. This is entirely unjust, for the ill health of its citizens is possibly the greatest economic liability that a government has to face, both as to loss of productive capacity and the dependence for support on society of the incapacitated. Therefore, it is of vital interest to every citizen that the public health be maintained at the highest possible level, and it is as much every citizen's duty to help bear this burden as it is to pay their proportionate share in protecting the interests of the government or for the maintenance of any of its public utilities.

To bring about an equitable adjustment of this public health burden among all the taxpayers, it would be necessary to have a schedule of fees possibly somewhat lower than what now attains; a county officer with duties that would be a cross between a collector and a sheriff, to look after the collection of all fees from the patient which the physician has failed to collect, and paying all uncollectible fees from a county fund collected from the taxpayers for that purpose.

Let us examine the advantages of such a system, from the viewpoint of both the patient and the physician.

In the first place, the physician would have no bad accounts, which would more than compensate for the somewhat lower fees charged; he would feel that he would be compensated, even though his patient was indigent, and would be inclined to give him better service. He would not be compelled to render service if he did not so desire, and would be free to charge any fee that he felt would be commensurate with the extra services demanded by his more fastidious patients, and any other that did not require the services of the official in collection.

From the patient's viewpoint, every one would be assured of adequate medical and hospital care at a moderate price. Each could choose his own doctor and could have the most elaborate care that his desire and pocketbook dictated. The indigent would be assured of adequate care from the physician of their choice, and certainly the public health would be improved to a degree that would make it very profitable to the government by reducing their liability of ill health.

In order to forestall adverse legislation, which will undoubtedly be brought about by the growing public distrust, if something is not done to combat such legislation it will be necessary that we all become politicians and fight as politicians do. It will also be necessary that we have wide-awake, functioning committees on professional relations in our state association, and, in our county societies, boards of censors that are fearless and that will always keep the good name of the profession above reproach.

These thoughts are only children of my imagination and may be entirely impractical, but I do not believe in criticism that is destructive and which does not offer anything that may be constructive to take the place of the things complained of; so, if this will create some interest and discussion that may lead to a practical solution of the problems that confront us, and thus avoid conditions that I believe would be calamitous to the medical profession, my object will have been attained and these remarks may have been of some benefit, after all.

Relief of Earache

Drops for earache that immediately and continuously give relief are not available, nor are they desirable, as they would mask the symptoms and permit middle-ear suppuration to go on to mastoiditis with all its dangers and sequelæ. Instillation, as hot as can be borne, of glycerin with 5 per cent of phenol is usually adequate to relieve pain of acute nonsuppurative middle-ear inflammation. If this does not suffice, prolonged irrigation of the ear canal with water as hot as can be borne usually gives a great deal of relief.—*Journal A. M. A.*, April 27, 1929.

OXYGEN THERAPY *

By M. A. BLANKENHORN, M.D.
Lakeside Hospital
Cleveland, Ohio

It is remarkable how little consideration standard textbooks on medicine give to the subject of oxygen therapy, especially in the treatment of pneumonia. Osler's *Principles and Practice* (tenth edition) deals with the subject in less than a line, but wisely says that cyanosis is the guide to oxygen treatment. The *Oxford System* (edition of 1928) even more briefly says "oxygen inhalation may be employed." The new *Osler's System* states that, in certain cases, something can be accomplished by oxygen therapy, but that much of the dissatisfaction is due to the method of administration.

Cecil's new textbook describes the various methods of giving oxygen, and adds a thorough discussion of the questions involved. On the other hand, the new edition of Cushney's *Pharmacology and Therapeutics*, 1928 (always very conservative), says: "Now that the therapeutic value of oxygen in many conditions has been definitely determined, it is probable that a new impetus will be given to the designing of more efficient and less wasteful methods of administration."

It is my purpose to discuss how definitely determined is the value of oxygen therapy, and to consider the methods of its administration. As long as oxygen therapy is considered as a treatment for a certain few diseases, or for certain diseased individuals, its value can not be clearly known. In the treatment of pneumonia, oxygen had passed its "period of primary laudation" twenty years ago. One of my teachers disposed of the subject by saying, "It is bad form in this community to permit a patient to die of pneumonia without bringing an oxygen cylinder onto the premises." Now, even with the most modern equipment (*viz.*, the oxygen chamber, where patients live for days in an atmosphere enriched with oxygen), results, as to surviving the disease, are hard to determine. Reports, such as those by Binger[1] of the Rockefeller Hospital, Barach[2] from the Presbyterian Hospital of New York, and from Boothby[3] of Rochester, Minn., claim no great improvement as to the mortality in pneumonia. What they all do claim and can show is that, in most instances, the oxygen content of the blood is increased by the treatment—and that is the object of the treatment.

In a condition of such complex pathology as pneumonia, where many factors are present as potential causes of death, oxygen therapy can at best be expected to account for only the factor of oxygen want. How effectually oxygen inhalations overcome oxygen want in the patient is no longer a conjecture, for the matter can be tested by examining the arterial blood before and after the administration of oxygen, to see how much is being absorbed. Was therapy ever better controlled than to give the substance and examine the blood to see how much has been absorbed? This has all been carefully done, particularly when patients with pneumonia were treated in an oxygen chamber. It has been this method that has established the value of oxygen therapy, and the matter can be dismissed as settled.

Let us now consider the matter of comparing the more common methods of oxygen administration with the chamber method. This can be, and has been, done by comparing the oxygen percentage of the inspired air in the different methods of treatment. In the chamber an atmosphere of 30 to 40 per cent oxygen must be given to be effectual. Ordinary air is 20 per cent oxygen. With the common tube-and-funnel method, the inspired air is 22 per cent oxygen at best. With the nose catheter method—that is, an ordinary catheter inserted in one nostril and oxygen flowing briskly (2 litres per minute)—the inspired air is 30 to 40 per cent oxygen. In certain of the bed tents, as in the one used at Lakeside Hospital, Cleveland, the inspired air can be kept at 40 per cent oxygen, or even higher. Examination of the blood of patients treated by these various methods show that only when 30 per cent or more is used is there any increase in blood oxygen.

The use of mouthpiece inhalation is comparable to nose catheter methods in so far as available oxygen is concerned. The same may be said of mask administration; but neither mouthpiece nor masks are well enough tolerated by patients to allow of any great usefulness in continuous therapy. There is, therefore, no value whatever in the tube-and-funnel method. I may quote a recent writer, who says one might as well treat heart disease by spraying tincture of digitalis into the patient's bedroom with an atomizer.

The bed tent and the nose catheter methods are at present the most useful. The tents are for luxurious circumstances that can afford several hundred dollars for the apparatus and ten dollars per day to operate. The tent requires more or less attention by

* Read before the Section on Internal Medicine of the West Virginia State Medical Association at Martinsburg, W. Va., on May 22, 1929.

a skilled attendant, usually a hospital interne. The nose catheter method is as simple as it sounds, and as cheap; but, to keep a continuous flow of 2 litres per minute, large, high-pressure cylinders are necessary, with reducing valves and flow meters to control the flow. This equipment is not expensive, and neither is the oxygen thus consumed. When the largest cylinders are used the cost at wholesale rates, as paid by our hospital pharmacist, is $1.60 per day. For convenience, large cylinders are almost imperative because small ones are so quickly exhausted. The smallest cylinder furnished by the Ohio Chemical Company lasts but 1¼ hours. The next size, about two feet long (such as is commonly used with gas anesthesia), runs 2½ hours. The 30-inch size runs 3¾ hours. The 55-inch size runs 36 hours.

When bed tents are used, the greatest cost is for the soda lime used to wash the air free of CO_2. Other things being equal, all methods are effectual in relieving oxygen want in proportion to the richness of the inspired air furnished, and it is this knowledge that gives the impetus to design the new equipment now being produced. I can generalize as to methods as follows: The funnel is useless; one nose catheter will provide 30 per cent oxygen; 2 catheters at 2 litres per minute will provide 40 per cent; tents, 40 per cent and more. Amounts greater than 40 per cent are seldom used. Sixty per cent is said to be entirely safe, but atmospheres richer than 60 per cent are known to produce pneumonia.[4]

When all problems of oxygen administration are solved there will still remain the question of why it frequently fails to work. Since it is expensive, troublesome to doctors and patients, and, to a certain extent, alarming to the patients, we would, if we could, use it only when it would produce the desired results. It is proposed to try oxygen in all and discard it when found useless; but the only way to really know that it is useless is to analyze the blood before and after administration. This is a hospital procedure and can not be generally employed. What bedside technique within the command of all of us can be employed to guide oxygen therapy? None, other than the examination of the patient as to his signs and symptoms. So let us consider the matter.

Oxygen want in the patient is shown by cyanosis, so a bedside knowledge of cyanosis is our guide to oxygen treatment. Only in anemia (less than 30% hemoglobin) is oxygen want not seen as cyanosis. On the other hand, cyanosis may not always be an expression of oxygen want—the exceptions are polycythemia with plethora, and in stagnant circulation. Just as the patient with anemia may have serious oxygen want and have no cyanosis because he does not have enough blood, so the patient with plethora, due to polycythemia, may have cyanosis on account of his excess blood, but no oxygen want.

Cyanosis is due to the actual amount of unsaturated blood,[5] and not to the percentage of unsaturated blood—that is to say, a patient with plethora can have so much blood that he can not oxygenate all of it properly, and, even with an abundance of oxygen, might by cyanotic. Another form of cyanosis which is of no significance, in that it does not represent a true oxygen want, is local cyanosis, seen in nails and lips under exposure to cold. This form of cyanosis is due to slowing circulation in the capillaries. The circulation is so slow that oxygen is exhausted from blood locally, and while these parts are relatively in oxygen want, the vital centers have ample oxygen. When this type of cyanosis is due to healthy vasomotor responses, it is of no significance. When this type of cyanosis (*i.e.*, cyanosis due to stagnant blood) is a result of low blood-pressure and failing circulation everywhere, this type is extremely significant, but it is not amenable to oxygen treatment. Oxygen can not relieve cyanosis unless the blood is brought to the lung to be in contact with oxygen. Therefore, in failing circulation, nothing can be accomplished with oxygen therapy to relieve the cyanosis. It is very important in controlling oxygen therapy, especially in pneumonia, to recognize, if possible, that such cyanosis is present. It is disastrous to our faith in oxygen therapy to treat this type of patient and expect any improvement. The stagnant type of cyanosis can be recognized by finding the evidences of failing circulation: these are, in pneumonia, rapid pulse, small pulse, low blood-pressure, and cold extremities. When a pneumonia patient is seen to develop these phenomena coincident with deepening cyanosis, oxygen therapy can accomplish nothing. The indications, then, are to improve the circulation, if possible. This combination of stagnant circulation and cyanosis, frequently seen in pneumonia, gives a peculiar appearance to the skin (described by some as heliotrope, by others as ashen cyanosis). It is probably a combination of pallor and cyanosis. It is frequently seen, and augurs ill.

When the circulation is good and the lung lesion of pneumonia alone is considered, there is no agreement is to the exact cause of the cyanosis. The main contention centers about the circulation through the

consolidated lung, and whether or not the so-called "admixture cyanosis" is present.

Long ago it was proposed that, in pneumonia, the lung being solid, no air can reach the blood pouring through the involved portion; whereas, in the remaining parts, aëration, even though complete, can not compensate for the failure elsewhere, nor can oxygen inhalations make the healthy lung overaërate. This type of cyanosis is found when the bronchus is plugged and circulation through the lung remains normal. It is also the type of cyanosis seen in certain types of congenital heart disease and rightly referred to as "admixture cyanosis." Under these circumstances, it is not reasonable to expect that cyanosis will be improved by oxygen inhalations. However, the problem of the circulation through a pneumonic lung is not settled. Recent views are that the blood-flow through a pneumonic lung is diminished, perhaps stopped, and that there is no such thing as admixture cyanosis in pneumonia. Recent work not yet in print, done by my confrère, Dr. A. J. Beams, who has studied pneumonic lungs with barium injection, convinces me that in certain instances blood-flow through the lung remains very lively, and that admixture cyanosis occasionally is present. This is in harmony with our observation that certain pneumonia patients, even though deeply cyanotic, are not benefited by oxygen inhalations. Until more is known about the exact nature of cyanosis in pneumonia, numerous points in oxygen treatment will not be settled.

When the theory of admixture cyanosis can not be invoked to explain cyanosis in pneumonia, two other factors must be considered. One is that moisture, in the form of foamy fluid in the air passages and alveoli, interferes with free ventilation. The other is that rapid and shallow breathing provides insufficient ventilation. In either of these instances oxygen can be expected to be of value. It is of value in rapid and shallow breathing only when deeper and fuller breathing results from the treatment. However, when moisture in the lung is the principal cause for the cyanosis, oxygen therapy has its greatest value. This, I think, was explained by Hoover,[6] in that oxygen actually saturates the fluid bubbling in the bronchi, and that foam can be made to transport oxygen.

Now, to clear the discussion, if possible, let us see what we can expect in the way of results with oxygen therapy when we consider the facts about oxygen absorption and the theories about cyanosis. First, if cyanosis is due to failing circulation, and the failing circulation has not produced edema in the lung, nothing can be expected of oxygen therapy. Second, if the patient has enormous consolidation so that little breathing space remains, we can not expect that oxygen will overcome cyanosis entirely; it may help, but it will not overcome it. Third, if breathing is inadequate (that is, if respirations are enormously rapid and shallow, oxygen will be of little value because oxygen can not be brought into contact with the blood. Fourth, if the lungs are moist and filled with râles, oxygen can be expected to accomplish its most useful purpose, and such has been shown in our experience with pneumonia patients. With a definite idea that we give oxygen to overcome cyanosis, and by the practice of controlling the absorption of oxygen with blood gas analysis, oxygen therapy has, in the past winter, been a satisfactory procedure; but the satisfaction comes from knowing that, if oxygen want has been a factor in the disease, and that oxygen can be absorbed, we have overcome a dangerous symptom. It is our practice now to try the nose catheter administration for all cyanosis. If the nose catheter method relieves the cyanosis, we choose that method. If nose catheter does not relieve the cyanosis, we use the tent, keeping the patient there until he is well or until we learn by blood examination that no extra oxygen is being absorbed. I can not say that our mortality rate has been modified by this plan, but we have the satisfaction of knowing that, even if they do die, they die pink.

This dissertation of oxygen therapy has thus far been limited almost entirely to pneumonia, largely because pneumonia represents the condition most commonly requiring continued oxygen. I will touch but briefly on other indications. First, heart disease. When cyanosis is conspicuous in heart disease, oxygen therapy should be considered. Most patients with heart disease suffer from breathlessness, and cyanosis is only an incident. If cyanosis is increased by congestive failure and moisture in the lungs, oxygen may help. Especially will oxygen help if it can be shown that there is an undue amount of edema in the lung without stagnation of blood elsewhere; that is to say, if the patient has many râles in the lung, but has warm hands and feet, oxygen can be expected to help.

Pulmonary edema alone, resulting in cyanosis, is an urgent indication for oxygen therapy. Such edema occurs in the early stages of bronchitis, in nephritis, and in paroxysmal heart failure; it occurs in inhalation of irritating gases, and here oxygen,

given continuously, is of great service. Just a word about oxygen as a method in resuscitation. There is no good reason to use oxygen on some one who does not breathe. It is amply shown by Yandle Henderson that carbon dioxide and oxygen mixtures are much more useful for resuscitation than is oxygen. The standard resuscitating mixture is oxygen plus 5% carbon dioxide.

RÉSUMÉ

I can now summarize this dissertation briefly:

Oxygen therapy has but one object, and that is to relieve oxygen want; and oxygen want is invariably recognized as cyanosis. Cyanosis is, therefore, the guide to oxygen therapy. The true test of whether oxygen therapy is of value is whether or not it relieves cyanosis, and the absolute control is whether or not the oxygen content of the blood has been increased. In the past, oxygen therapy has fallen into disuse because of poor methods of administration—because it was used where there was no expectation of any help, and it was used without controlling the absorption by examination of the blood. Oxygen therapy can be successfully given in tents that fit over the beds. It can also be successfully given with nose catheter, if the flow is rapid enough to provide 2 litres per minute. For this, large tanks with reducing valves and flow meters are necessary. In pneumonia, little can be accomplished to overcome cyanosis with oxygen when cyanosis is due mainly to circulatory failure. Circulatory failure can be determined by quality of the pulse and blood-pressure, and by coldness of the extremities. Oxygen therapy can not overcome cyanosis in lobar pneumonia when consolidation is too great. Oxygen therapy is most successful when cyanosis is caused altogether or in part by moisture in the air passages or alveoli. There is no contraindication to oxygen therapy, and oxygen inhalations up to 60 per cent are safe under all circumstances. Now that the therapeutic value of oxygen in many conditions has been definitely determined, it is the duty of the physician to learn when and how to apply it.

Discussion

DR. D. A. MACGREGOR (Wheeling): I have been very much interested in oxygen therapy for the past two years. We have, in Wheeling, a modification of the oxygen chamber that fits over the bed. We have used it principally in pneumonia, but have found some use for it in cases of thyroidectomy, postoperatively. It works spectacularly at times in these postoperative cases. The two clinical signs which are relieved by administration of oxygen are the rapid pulse and the rise in temperature. It is surprising to see how soon, after the patient has been placed in the oxygen tent, the temperature drops to a lower level, if not to normal, and the pulse rate comes down. Of course, we are giving oxygen, as Dr. Blankenhorn has said, for a real oxygen want in the body, and unless that physiological necessity is present the administration of oxygen is unnecessary and unwarranted.

The structures which will suffer quickest from oxygen deficiency are the central nervous system and the myocardium. Naturally, if we permit a patient to go along with cyanosis for a considerable length of time before administering oxygen for its relief, we may expect that patient to have considerable damage to the nervous system and to the myocardium. It behooves us, then, to use oxygen quite early in the course of the pneumonia or in any other condition which calls for that form of treatment. It would be well for us not to wait for the ashen cyanosis of which Dr. Blankenhorn speaks. If we could determine the oxygen want before it is so very manifest to everybody, it would be still better.

I remember our first experiments with oxygen were very extravagant. It was our colleague, Dr. Thornton, who tried it out in Wheeling the first time. He had two very sick babies with bronchopneumonia, and for convenience they were placed in the same small room. Not having an oxygen tent or any particular way for giving oxygen, and realizing that the situation of both infants was very desperate, he secured a supply of the large cylinders of commercial oxygen, placed a half-dozen cylinders in the room, and then opened them one at a time and let the oxygen escape into the closed room without any gauge—without any way of confining it to the immediate environs of the babies. To his gratification and the surprise of all of us, these two desperately sick bronchopneumonia patients recovered. Of course, we have used oxygen on pneumonia patients who apparently were not quite so sick and who went on and died. I do not mention these cases as statistical evidence in favor of oxygen, although I am convinced that the mortality rate can be decreased by the proper administration of oxygen.

This big apparatus we have is quite an extensive affair and costs about four hundred dollars, if I am not mistaken. We have only one for the entire hospital and it can't be used outside. I know that the funnel administration is very unsatisfactory. I would like to know just how Dr. Blankenhorn uses

the two nasal catheters. I would like to know the minor details of the technique. I think it would be extremely useful in outside practice, or when the particular apparatus is not obtainable in the hospital.

DR. O. B. BIERN (Huntington): When I was a medical student, back in 1915, I remember one question that was asked on examination: "If a patient were overcome by illuminating gas poison, would you treat this patient by pure air or pure oxygen?" Some of the wise guys of the class said, "Give him air," and, as it turned out at that particular time, that answer happened to be right, because our physiology professor had tried to beat into our heads at that time that, in breathing pure air, normal lungs were saturated ninety-eight per cent with oxygen. He said the only thing you could hope to accomplish by the administration of pure oxygen over pure air was a possible two per cent, and it would have to be under pressure to be absorbed by the plasma. Apparently that physiology, like many things taught in 1915, has changed. My experience in using oxygen therapy has been very safe. I think it was of value, and I have never been able to start early enough, apparently, to give it to a patient to whom it would be of any benefit. The largest experience I had was perhaps during the war, when we saw an enormous number of gas cases, most of which had a pulmonary edema; and in that type of case, as Dr. Blankenhorn said, it should prove of greatest value. Of course, at the time we got the patients their symptoms had been there for some time and we couldn't begin at the beginning to give them oxygen therapy. In the hospital, especially at the bases, the mere bringing of the oxygen tank in anywhere close to where the patient could see it brought forth a shriek, because he knew his time to die was soon at hand; and whenever the orderly came through the wards with the oxygen tents, they immediately thought they were going to die—and that is what the bulk of them did. We just used the cylinders and then we put a screen around the patient so the rest of the patients couldn't see him.

It has been my experience all the way through. I am not pessimistic, but I wish Dr. Blankenhorn would tell us, when he closes the discussion, something I want to know. Given a case of pneumonia, when are you going to begin your oxygen therapy, to be of the most benefit?

DR. W. C. SWANN (Huntington): I would like to ask the doctor one question. About two years ago, I saw two cases of acute poisoning in the dyeing industry in which there was very marked cyanosis. At that time, doing the best I could, I recommended that oxygen be given the patients immediately, and also put them out in the open air. Both of these patients lived, all right. They were in the manufacture of fixing dye. I wondered if the doctor has had any experience with treating that type of cyanosis?

DR. W. E. VEST (Huntington): I can recall possibly two or three cases where lives, I believe, have been saved in our clinic by the timely use of oxygen. I am sure that oxygen has its field. I haven't in mind exactly what all the signs are that should lead us to begin to use it early, but I am convinced that, the earlier we use it, the better the result is going to be. I don't know whether Dr. Blankenhorn said anything about postoperative collapse of the lung, but these cases certainly do improve very promptly, it seems to me, under the administration of oxygen.

DR. A. H. HOGE (Bluefield): I want to emphasize the question that Dr. MacGregor brought out. While we have only one apparatus, it seems that when pneumonia comes it comes in bunches, and I am especially interested in this newer technique brought out in this discussion and would like to know more of the details. I would also like to ask Dr. Blankenhorn if he is familiar with a phase that I have watched for three years and am unable, because of lack of laboratory facilities, to check as closely as I would like to—the value of feeding pneumonia patients on almost exclusive carbohydrate diet. I seems that, by so doing, we can increase the amount of oxygen in the tissue and lessen the degree of cyanosis.

DR. BLANKENHORN (*closing the discussion*): May I answer Dr. MacGregor and Dr. Hoge at one time about the catheter technique? I don't wish to call it new, Doctor. It has been ascribed to Captain Adrian Stokes, who was in the Royal Army Medical Corps, and who later lost his life in Africa with the sleeping sickness. Dr. Stokes got the idea when he improved the Haldane mask, and he used the nose catheter to get away from masks. He had the same experience—that patients won't tolerate masks, because, when a man is short of breath, it doesn't matter what you put over his face, he thinks it makes him shorter of breath and takes it off.

We use ordinary urinary catheters, as large a size as the nares will permit, pushed back until it just touches the posterior pharyngeal wall, and drawn forward a bit so it is possibly half an inch from the

posterior wall. Then it is brought up over the forehead or ear and fastened with adhesive tape so it won't wiggle. If it doesn't move about in the nose, it is scarcely perceived, and if it is taped down firmly the patient can't get his finger under it in his activity, possibly in delirium, and pull it out. It is hooked onto a large oxygen tank and the most important thing is a rapid enough flow. Two litres a minute from the jet at the end of the tube, spraying against the posterior wall of the pharynx, is sufficient. Sometimes the patient complains that it burns at that spot. Perhaps it dries the membranes, so little holes at the side of the catheter may help.

Sometimes, two catheters in the nose are tolerated just as well as one. If the patient opens his mouth and insists on breathing with his mouth open, then the purpose is somewhat defeated, because during the inspiratory period there is ample air to rush in through the mouth and dilute the oxygen which is delivered through the tube.

The details of the technique have been gone over by physiologists and pioneers in oxygen therapy, and the bibliography which I have submitted with my paper here will give you the details better than I can.

I have been pessimistic, just as Dr. Biern said he was pessimistic for a good many years, but not until I saw an oxygen-treated patient in a chamber at the Rockefeller Hospital did I have any conviction that oxygen did them any good. Then when I heard, to my dismay, that the funnel method was of no value (which is the one I had almost invariably used), and that the catheter method was not of much use unless a rapid flow was given—I was pessimistic; now I am a bit more optimistic.

The doctor asked about gas edema. It is true that, if a person gets a lethal dose of gas, nothing in the world can put oxygen across that barrier of edema fluid which is laid down on the respiratory membrane and then piles up in the alveoli. It is physically as well as physiologically impossible. Mind you, this edema begins gradually and mounts up, regardless of treatment. Treatment can't prevent edema from forming, when it is due to inhalation of chemical irritants. So exactly the same situation occurred with the gas in this recent disaster. They received, without doubt, inhalations of a gas which physiologically and pharmacologically was like phosgene. It undoubtedly laid down a film of nitric acid on the alveoli membrane. Those that had a sublethal dose were helped by oxygen. The patients given oxygen by nose catheter methods were rid of their cyanosis. Some did not recover, but those that lived a full twenty-four hours were, I think, very much benefited by oxygen given adequately. There were not enough tents, unfortunately, to take all of these patients, but the nose catheter method did help them.

Dr. Swann asked about cyanosis in the dye industry. I did not understand, Doctor, the name of the dye. Was the dye one of the aniline series which combines and forms methemoglobin?

DR. SWANN: From an oil.

DR. BLANKENHORN: I have not treated these patients, but the chemists in Akron (Dr. Newton treated some of them during the munitions days) tell me that the cyanosis in that instance was due to methemoglobin and there was more intoxication than there was asphyxia; that the cyanosis is alarming, but not particularly dangerous in oxygen want.

It was formerly supposed that methemoglobin was not a respiratory pigment; but methemoglobin is capable of transporting oxygen, not as well as hemoglobin, but methemoglobin will respire; so, if these individuals are asphyxiated and do not breathe, they will be better if they can be made to breathe oxygen. Oxygen will not wipe off cyanosis due to methemoglobinemia.

Dr. Vest asked about the result in postoperative collapse of the lung. I have seen, to my disappointment, I fear, very little postoperative collapse of the lung. I became very much interested in the thing when I saw it among patients who had war wounds of the chest. It was a delightful plaything for one interested in dealing with physical signs. I have had occasion to review the literature often on postoperative massive collapse, and the thing that appeals to me as a rational thing in treatment is anything that will get the patients to take a deep breath. The introduction into his presence of a breathing apparatus and the instruction to take a long breath is, I think, as valuable as oxygen. I do not see how, in this instance, cyanosis produced by massive collapse, where the air entering the lung is excluded from a portion, can be helped by inhalations of oxygen to the rest of the lung. This is purely a theoretical discussion.

I believe the most efficacious treatment—the one advocated by Cutler and Scott of our surgical clinic—is to give inhalations of carbon dioxide, which compel a patient to take a full inspiration. I think that is of value in distending the lung and overcoming collapse.

Incidentally, that problem of distending an atelectatic lung to provide a better ventilation is a very cogent question in the treatment of these gassed

individuals. There was difference of opinion among us as to whether or not carbon dioxide should be used. We had telegraphic advice from Dr. Henderson about the matter, and we had all manner of counsel. In some instances, pseudoresuscitation methods (that is, oxygen under pressure) were used, but there is varying testimony as to whether or not anything was accomplished by pressure methods. We expect to have a commission deal with the problem and possibly an answer will come forth.

I can not answer Dr. Hood's query about the feeding of carbohydrate further than to say we have not followed any principle in feeding. We have been a bit interested in the use of glucose intravenously, partly to keep up metabolism, possibly to keep up water balance.

BIBLIOGRAPHY

1. Binger, C.: *N. Y. State J. of Med.*, Vol. 25, p. 953.
2. Barach, A. L.: *Arch. Int. Med.*, Vol. 35, 1926, p. 186.
3. Boothby, and Haines: *Trans. of Assoc. of Am. Phys.*, Vol. 42, 1927, p. 287.
4. Karsner, H. T.: *J. Exp. Med.*, 1916, Vol. 23, p. 149.
5. Lundsgaard, Christian: *Medicine*, 2: 1, February, 1923.
6. Hoover, C. F.: *J. A. M. A.*, 1918, Vol. 71, p. 880.

ACUTE ABDOMINAL PAIN *

By W. H. WALLINGFORD, M.D.
Princeton, W. Va.

In ninety per cent of all disease, pain is a prominent symptom at some point in its course. Pain is by far the most prominent symptom in all abdominal disease. It is the thing most dreaded by the patient and the thing that, more than any other, will cause him to seek medical aid. Its intensity, location, radiation, persistency, and relation to other symptoms will often alone point to a correct diagnosis. The cessation of pain in abdominal disease is always welcomed by the patient, but, instead of being a favorable omen, it often indicates a grave prognosis. Pain is the most valuable sign to the abdominal surgeon, and, given but one symptom upon which to make a diagnosis, he would invariably select pain. Pain in the abdomen does not always mean abdominal disease, but, on the other hand, abdominal disease almost invariably means pain. In fact, a diagnosis of any acute abdominal condition with no pain is always to be regarded with suspicion.

In making a diagnosis of any acute abdominal disease, the two paramount conditions necessary for a correct diagnosis are a painstaking history and a thorough physical examination. If confirmatory evidence is needed, the laboratory, x-ray, and cystoscope will often give valuable aid. In case a diagnosis can not be positively made, an exploratory laparotomy should be performed rather than spend too great a time in trying to make a sure diagnosis. The longer operation is delayed in the acute abdomen, the greater the danger of the patient not recovering. Owing to the fact that all abdominal pain does not mean abdominal disease, patients with abdominal pain are occasionally subjected to operations where no pathological condition is found in the abdomen.

To properly interpret abdominal pain as a symptom, a brief review of the nerve supply of the abdominal wall will be of material aid. The abdominal parieties are supplied by the lower six intercostal nerves, both anterior and posterior branches, and terminate in the recti muscles on each side and give sensation to the mid-front of the abdomen. The hypogastric and inguinal regions are supplied by the last dorsal, the ileo-inguinal and ileo-hypogastric nerves. The posterior wall of the abdomen is supplied from the lumbar and sacral plexuses. The pneumogastric nerve runs along each side of the esophagus, the right branch going to the posterior wall of the stomach and helping form the solar plexus, and the left to the anterior wall. The sympathetic nerve enters the abdomen below the diaphragm and forms four lumbar and four sacral nerves, ending in the coccygeal ganglia. The phrenics from the fourth cervical communicate with the solar and hepatic plexuses and thus have visceral connections. The nerve supply of the viscera and visceral peritoneum is derived from the various sympathetic plexuses, while the parietal peritoneum is supplied directly from the spinal nerves and the phrenics. The spinal nerves contain a great many more sensory nerves than the sympathetic. Therefore, the parietal peritoneum is very sensitive to pain, while the viscera and the visceral peritoneum are not sensitive, or, if so, very slightly.

Acute abdominal pain may be divided into pain from conditions in the abdominal wall, pain from conditions within the abdomen itself, and pain due to extraäbdominal conditions.

Erysipelas of the abdominal wall sometimes produces rather acute, burning pain. The diagnosis is the same as for the same condition in any other part of the body, and is so characteristic that the condition is easily recognized.

Neuralgias of the abdominal wall cause very acute pain in the abdomen and may simulate intra-abdominal conditions. This is accompanied by ten-

* Read before the Clinch Valley (Virginia) and Mercer County Medical societies at Bluefield, West Virginia, May 9, 1929.

derness that is increased by pinching the muscles between the fingers, and is relieved by deep pressure, thus differentiating it from peritonitis, which is just the opposite.

Abscess of the abdominal wall may be confused with abdominal conditions. The symptoms of heat, redness, swelling, local tenderness, and fever not accompanied by vomiting, usually point to the correct diagnosis.

Hernia involves both the abdominal wall and the viscera. It does not cause acute pain unless it becomes strangulated. It then becomes an acute surgical condition, demanding immediate operation. You have a history of hernia that fails to be reduced, accompanied by all the symptoms of intestinal obstruction. Delays are extremely dangerous, but early operation before gangrene or peritonitis develops offers good chance for recovery. In these cases a thorough inspection of the abdomen is important. The writer was called to see a female patient several years ago, and the family physician had failed to discover the cause of her abdominal pain because the bed clothing had not been removed low enough on her abdomen to reveal a strangulated hernia which was present.

Occasionally, severe pain is complained of in the abdomen that may or may not be accompanied by any great gastrointestinal disturbance. Oftentimes there is considerable fever and the diagnosis may be obscure. In a day or two the characteristic blebs of herpes zoster clear up the situaton.

Inguinal adenitis occasionally causes rather acute pain of the lower abdomen. The history, absence of impulse on coughing, and physical examination differentiate this condition from femoral hernia, the condition with which it may occasionally become confused.

Tumors of the abdominal wall cause acute pain only when their growth is rapid or when they incorporate nerve fibers within themselves.

Appendicitis is probably the most common cause of acute pain in the intraäbdominal conditions. The pain in appendicitis at first is acute and general and is usually greatest around the umbilicus, due to the fact that the appendix receives its nerve supply from the same source as the small intestines. Pain is followed by vomiting, fever, rigidity of the right rectus, and tenderness over McBurney's point. A leucocytosis is present. The late John B. Murphy, of Chicago, claimed that if pain is not the first symptom in an intraäbdominal condition, the condition is not appendicitis. A rectal examination should be made in all doubtful cases of appendicitis. This must be differentiated from perforated gastric ulcer or duodenal ulcer. The rupture of a gastric or duodenal ulcer produces probably the most excruciating pain of any intraäbdominal condition. The pain comes on suddenly, is very severe, the rigidity is very great, and you find the characteristic boardlike abdomen. Vomiting is severe, and shock and collapse oftentimes intervene. Owing to the seeping of the bowel contents into the right iliac fossa, pain and tenderness is elicited later in the region of the appendix. In perforated ulcer, a previous history of digestive disturbance is of little value, as perforation is often the first symptom of ulcer.

In acute gallbladder disease, usually there is a history of digestive disturbance—oftentimes persistent and serious. The pain in an attack is acute and is felt in the epigastrium and along the border of the right ribs and to the right shoulder, occasionally to the left. A stone in the common duct produces the most excruciating pain. The presence of jaundice may or may not be present, and of itself is of little diagnostic value. An x-ray will often give valuable aid in the diagnosis in this condition. Hepatitis, abscess, cancer, and syphilis of the liver also cause acute abdominal pain.

Cancer of the abdominal viscera does not produce acute pain at first, but is severe in the later stages. The presence of a tumor in the abdomen, with the characteristic symptoms of carcinoma, loss of weight and strength, emaciation, anemia, and cachexia, usually is sufficient for a diagnosis. The x-ray is often a valuable aid in this condition. Intestinal obstruction is often a fatal termination.

Gunshot wounds of the abdomen cause acute pain and require quick diagnostic ability as to the amount of damage done. If there is a doubt as to whether the wound has penetrated the abdominal viscera, but little time should be lost in performing an exploratory laparotomy. If the viscera are not injured, the patient's chances of recovery have been jeopardized very little, if any; while, on the other hand, if the viscera have been punctured, too great delay to determine the exact condition may mean the difference between recovery and death.

Rupture of the abdominal viscera from external violence causes acute lancinating pains in the abdomen at the time of the injury, but oftentimes it soon passes off and the patient may not again suffer acute pain until some complication develops. The hollow viscera are the most likely to be ruptured, especially if distended; thus the stomach, just after a meal,

the bladder while full, and the kidneys are probably the most commonly ruptured, although any viscerus is liable to this accident.

Several years ago a sixteen-year-old boy, who had complained of intermittent pain in his abdomen for thirty-six hours, was brought to the Princeton Hospital. His temperature was 102°, pulse 120, respiration 24. His abdomen was distended considerably. Marked tenderness was elicited all over his abdomen, but was greatest over McBurney's point. He was markedly pale, however, and a blood count showed a deficiency of red cells. A probable diagnosis of ruptured appendix with peritonitis was made. The abdomen was opened and found full of blood. The spleen had an extremely bad stellate laceration. He at first denied any injury, until a neighbor stated that she saw him wrestling with another boy and saw the other boy fall down upon his abdomen with his knees. The patient then admitted this fact, but stated that while he suffered severely for a few minutes, his pain then ceased and he had no further pain for thirty-six hours.

Intestinal obstruction is probably the most dreaded condition within the abdomen with which the physician or surgeon has to deal. In this condition the general practitioner is the man of the hour. His ability to properly diagnose and promptly advise early surgical intervention oftentimes spells success or failure. It is well for the family physician to keep in mind, in intestinal obstruction, the old adage, "Let not the sun rise or set on a case of intestinal obstruction without operation." The most common types of intestinal obstruction are intussusception, volvulus, kinks or bands around the intestines, carcinomata or tumors, fecal impaction, and mesenteric thrombosis or embolism. The pain is severe; vomiting is persistent, becoming stercoraceous; the abdomen is distended, and there is failure of bowel evacuation of fecal contents or gas. Operation should be performed promptly and boldly; oftentimes the two-stage operation is advisable.

Mesenteric thrombosis and embolism occur from the blocking or cutting off of the blood supply in the mesenteric blood vessels. The pain is severe and, if due to blocking of the superior mesentery, occurs above the umbilicus, if in the smaller mesentery below the umbilicus. The onset of embolism is sudden, but the onset of thrombosis is slower, with all the signs of obstruction in both. This condition is usually found in patients beyond fifty and is usually associated with arterio-sclerosis.

Dysentery causes griping pain in he abdomen. The pain is paroxysmal in character, accompanied by small, frequent, mucus and blood-tinged stools

Peritonitis is usually secondary to some other condition and is one of the most distressing conditions in the abdomen. There is severe pain, distention, nausea, and vomiting, and tenderness increased on deep pressure, and the abdomen has a doughy feel. Pain is absent upon pinching the abdominal muscles.

A diverticulitis causes severe pain the abdomen, but the condition is rarely diagnosed prior to operation.

Caries of the vertebræ, spinal tumors, and osteomyelitis of the vertebræ are other conditions that sometimes cause acute abdominal pain.

Intestinal colic is one of the most common causes of acute abdominal pain. It is seen most often in boys during the green apple or cider season. The pain is severe and griping, and comes on suddenly. Usually there is no disturbance of the pulse or temperature. There is usually not much rigidity except during a paroxysm of pain. A dose of castor oil, followed by copious evacuation of the bowels, cures the case as a rule. If the pain persists beyond two or three hours after complete evacuation of the bowels, some other condition may be present.

Since the advent of typhoid vaccine, typhoid fever is fast becoming obsolete; but I will mention typhoid as one of the conditions causing acute pain in the abdomen. Sometimes the pain is severe at the beginning, and the onset may be rather sudden. It is occasionally confused with appendicitis. A careful history, with the aid of the laboratory, will render this mistake rare. Perforation late in the disease causes acute, sudden pain in the right iliac fossa, with collapse, and prompt surgery offers the only hope of recovery. Until a few years ago this disease was one of the most common adominal diseases. Of late years typhoid fever's place has been usurped by abdominal influenza. This disease is accompanied by acute pain in the abdomen, vomiting (oftentimes severe), tenderness, and frequently muscular rigidity. It has been mistaken for appendicitis and appendectomies performed. Again, careful history and thorough physical examination will render this mistake rare.

We have a number of conditions causing acute pain in the abdomen arising from organs peculiar to the female sex. These conditions may be divided into, first, those conditions arising in the womb, and, second, those arising in the adnexa. Acute polyhydramnios is a rare but distressing condition causing acute abdominal pain. Quite a number of preg-

nancies have a considerable excess of amniotic fluid, and often they cause only a feeling of distress; but in those cases where the amniotic fluid is greatly increased *rapidly* there is acute pain and the patient presents a picture much like a heart case—abdomen greatly swollen, shortness of breath, feet swollen, and there is inability to palpate the fœtal parts. Rest in bed and delivery relieve this condition.

An hydatiform mole, because of its rapid growth, often causes severe pain, especially if hemorrhage takes place in some of the attachments of the mole to the uterine wall. The woman usually considers herself pregnant, but has a great deal of pain. If the abdomen is watched, the uterus will be seen to increase in size much too rapidly for a normal pregnancy. Carcinoma may be a sequel to this condition.

Rupture of the uterus causes severe, lancinating pain, and occurs sometimes in severe prolonged labor, especially following Césarean sections, and from external violence. The use of large doses of pituitrin has been known to cause rupture of the uterus during labor. Prompt surgical interference should be resorted to in such cases. Spontaneous rupture occasionally occurs in one horn of a bicornate uterus and is analogous to the rupture of the tube in tubal pregnancy. A retroverted uterus in the twelfth to sixteenth week of pregnancy may become incarcerated and cause severe pain.

In conditions in the adnexa, rupture of an extra-uterine pregnancy causes the greatest pain. This pain usually comes on suddenly, is very severe, and is greatest in the affected side, and the patient may faint or feel "fainty." There may be considerable abdominal tenderness. Irregular menstruation plus the pain and the finding, upon examination, of a mass in one of the tubes that is very tender usually completes the diagnosis. This condition should be differentiated from salpingitis. It also produces severe pain, but is accompanied by fever and chills with rapid pulse and all the signs of an acute infection. The history of gonorrheal infection or recent abortion also is of value in making a diagnosis of salpingitis.

Three or four years ago there was brought to the Princeton Hospital a patient who had called three physicians in two days, one after the other. She complained of pain in her lower abdomen. At the time of the visit of each physician she was in a typical hysterical convulsion and assumed the characteristic opisthotonos position. The first two physicians each gave her a hypodermic injection of one-fourth grain morphine and told her she was "just nervous." This morphine would relieve her for two or three hours; then she would complain as before. The third physician made a vaginal examination and found a mass about the size of a quart cup in her left hypochondrium. At operation a gangrenous ovarian cyst that had a twisted pedicle was removed. This case shows that a patient may have a typical hysterical attack and still be suffering from a severe pathological condition.

Of all the conditions external to the abdomen that cause acute abdominal pain, probably chest diseases are the most common. Under this heading we find pneumonia, diaphragmatic pleurisy, diaphragmatic abscess, abscess of the lung, hemorrhage into the finer bronchioles of lower lobes of the lungs, fractured ribs involving the pleura or lungs, and artificial pneumothorax. All cause acute abdominal pain.

In pneumonia, especially in children, it is not at all uncommon to find cases of lower-lobe pneumonia simulating appendicitis or gallbladder disease, and that the chest is entirely overlooked. Quite a number of surgeons of prominence have operated upon patients for appendicitis, only to find that organ to be normal and then find the patient with a consolidated lower right lung the next day. A good rule to follow, to avoid this mistake, is to give the chest, in all acute abdomen cases, the same careful examination that is given the abdomen. It should not be lost sight of that these two conditions may be present at the same time. A blood count may not be an aid, but it should be borne in mind that a white blood cell count of more than 20,000 cells is rare in appendicitis. A rectal examination may confirm the presence of appendicitis in a doubtful case. Oftentimes, x-ray of the lungs will give valuable aid in these cases. Pleurisy causes acute pain in the abdomen, and, if the chest is examined, will rarely be mistaken for intraäbdominal disease.

Hemorrhage into the finer bronchioles of the lower lobes of the lungs causes acute pain in the abdomen, but, as it is not usually accompanied by any other abdominal symptoms, it is not commonly mistaken for intraäbdominal disease.

Artificial pneumothorax of the lower part of the lungs causes pain in the abdomen. This occurs at the time the pneumothorax is performed, and thus the cause of the pain is obvious.

The next most common conditions under this heading are kidney diseases. In these conditions the laboratory, cystoscope, and x-ray are of paramount importance as an aid to correct diagnosis. Kidney or ureteral pain is of two kinds: inflammatory and

non-inflammatory. The pain in the inflammatory type is aching in character and is increased by palpation and pressure, and is oftentimes increased by deep breathing. In the non-inflammatory type the pain is more severe and paroxysmal in character, and often disappears very suddenly. Pain in the kidney involvement is felt in the region of the kidney and is referred to the lower iliac or suprapubic region. In ureteral involvement the pain is usually referred to the penis, scrotum, and perineum.

Acute pain is present in from seventy-five to eighty per cent of pyelitis. It radiates from the back to the thigh and perineum, sometimes to the epigastrium. The pain in renal calculus is paroxysmal when the stone is too large to enter the ureter and is constant if the stone becomes lodged or if infection is present. The pain radiates to the crest of the ileum, the anterior abdominal wall, the groin, and the testicle. Lane-Roberts divided pyelitis of pregnancy into three types: (1) the renal type, where the pain is complained of in the back and loin and the patient has the symptoms of infection but rarely complains of any kidney disturbance; (2) the abdominal type, where the pain is very severe in the abdomen, with distention, tenderness, rigidity, nausea and vomiting (it is often hard to differentiate this type from appendicitis, cholecystitis, or intestinal obstruction); (3) the generalized type, where the pain in the abdomen is slight and the symptoms and signs are not localized in the abdomen.

Dietl's crisis oftentimes is confused with appendicitis and other abdominal conditions. Dr. Kelly claimed a good method of determining the question between appendiceal pain in the kidney by injecting its pelvis and at the same time measuring its contents.

Acute pain is found in the terminal stages of some cases of tuberculosis of the kidneys, due to blocking of the ureters.

Tumors of the kidneys, ureter or bladder cause acute pain when they cause obstruction, and hemorrhage is an early symptom.

Perinephritis causes pain over the kidney region with tenderness and edema. This, with the constitutional symptoms, points readily to the condition.

Injuries to the kidneys may cause acute abdominal pain, accompanied by tenderness and dullness and, oftentimes, discoloration. Blood is found in the urine, and if the injury is severe, shock is often marked.

Retention of urine causes severe pain in the abdomen, and while attention to the outflow of urine with a physical examination will readily demonstrate the condition, it has been mistaken for tumors, pregnancy, abscess, *et cetera*. Catheterization of the patient immediately relieves the condition, but in cases of stricture, enlarged prostate or other conditions blocking the outlet, this may be impossible and may require surgical intervention to relieve. A female patient was brought before a student body in one of our large hospitals, several years ago, to demonstrate a threatened abortion in a six-months' pregnancy. The nurse, carrying out routine orders, catheterized her just before she wheeled her before the class. A physical examination revealed that her "pregnancy" had disappeared.

Acute pancreatitis is one of the most fatal diseases causing abdominal pain. The patient is usually beyond forty, but occasionally younger. The patient is suddenly stricken with severe pain that is almost impossible to relieve at times, even with large doses of morphine. The vomiting is severe and persisent, resembling intestinal obstruction, but is never fecal. Emaciation takes place rapidly and collapse soon ensues. The pulse is usually rapid, but if collapse does not occur it may remain slow and strong. The temperature, as a rule, is not high. This is regarded by most physicians as a surgical condition. Deaver reports that medical treatment shows a mortality of from eighty to ninety per cent, while those cases treated surgically showed a mortality of from thirty-eight to eighty-three per cent.

The pain of gastric crisis often resembles gall-bladder disease, ruptured ulcer, or appendicitis. At times, gastric crisis is seen as the initial symptom of the patient's complaint; in these cases, mistakes have been made and the patient submitted to operation. The previous history, examination of pupils, station and knee-jerk, a blood Wasserman and, if negative, a spinal fluid test, usually will reveal the true condition.

Pericarditis resembles gallbladder disease at times as to location of pain, and is accompanied by vomiting, tenderness, and some rigidity in the epigastrium and over the gallbladder. In a few hours the characteristic friction rub, accompanying the heart-beat, reveals the true condition.

Angina pectoris usually comes on after the age of forty; most often about sixty. The pain is viselike under the sternum, radiating to the left shoulder and down the left arm. In some cases it radiates to the epigastrium and the gallbladder region, with a resistance of the abdominal muscles and tenderness. It is then confused with indigestion and gallstones. The patient may have a number of attacks and may

die suddenly in one of them. Many of the distinguished individuals who are reported in the press throughout the country as dying of "acute indigestion" no doubt die of angina pectoris.

Gauss described a condition called "angina abdominalis," in which the symptoms are abdominal pain that is localized around the umbilicus. Ortner states that "The pathological basis of the pain appears to be an arteriosclerotic narrowing of the arterioles supplying the intestines which forces the bowel to work under stress, thereby giving rise to visceral pain."

Clinton gives subcostal neuritis as a cause of acute abdominal pain, due to the repeated trauma of the eleventh and twelfth intercostal nerves being pinched between the lower rib and the crest of the ileum in short-waisted individuals and in those having unusually long eleventh and twelfth ribs. The pain is described as toothlike. The cure is to resect about one inch of the end of the rib with the nerve.

Brennan claims that tonsillitis and "throat infections" often cause acute abdominal pain that is severe, intermittent, and paroxysmal, and referred to the umbilicus, and sounds a warning that in all "throat infections," instead of excluding appendicitis, it is to be expected as a complication or sequel. He does not explain, however, the nerve connection that produces the abdominal pain.

The pain of lead poisoning may simulate acute abdominal diseases, but the history of the occupation of the patient, the blue line along the gums, anemia, the characteristic wrist-drop, together with a careful examination, will show the real cause of the condition.

The pain of hysteria can simulate any acute abdominal condition. Hysterical patients who have been around hospitals often, and thus learn the symptoms of various diseases, can "throw" attacks of most any disease. One should not lose sight of the fact, however, that these patients may have a typical hysterical seizure and still be suffering from a severe pathological condition.

Thyrotoxicosis may, in rare cases, produce pain, vomiting and diarrhea that will give rise to a suspicion that it is some intraäbdominal condition. The symptom of goiter and the history will lead to a satisfactory explanation.

It has been said that uremia can produce pain that will simulate any abdominal condition. With our modern methods of diagnosis, this condition is rarely mistaken now for any operative condition.

Reisman reports a case, in a girl who had severe pain in the right hypochondrium with a leucocytosis, fever and vomiting, that was diagnosed as appendicitis and she was prepared for operation. Later, evidence of diabetic acidosis was found. In getting her history it was discovered that she was diabetic and had temporarily run out of insulin. A dose of the drug was administered and she was promptly relieved.

PRENATAL CARE *

By W. SCOTT SMITH, M.D.
Philippi, W. Va.

It is not the object of this paper to attempt to give the members of this society anything that they do not already know, but simply to remind us of our everyday duties to the expectant motherhood of our respective communities.

Every physician appreciates the importance of supervision of even healthy pregnant women, and I think, too, that the public is being educated more rapidly on this subject and the necessity of such attention than formerly. There is no field in preventive medicine where so much real good can be done. Statistics show that 100,000 babies are born dead each year; another 100,000 die the first few weeks of life. To reduce the invalidism and wretchedness of mothers during pregnancy and labor, which may be made normal and safe by carefully watching a woman through her period of gestation, is the object of this paper. Upon presentation of a prospective mother, the diagnosis of pregnancy—which is not always easy—must be confirmed, and the history of former obstetric accidents, eclampsia, hemorrhage, twins, Bright's disease, insanity, nature of previous pregnancies and labors if any, noting any stillborn babies and probable cause; ophthalmia neonatrum, paying particular reference to diseases of the heart and lungs, syphilis, tuberculosis, hemophilia, alcoholism, etc., we should try to find out the cause of former abortions and premature labors, thus determining the mother's fitness for the ordeal of delivery.

The part played by the husband in obstetric complications has never been properly noticed. If he is large and heavily boned he may procreate children too large for his wife to bear safely. Venereal disease communicated by the male consort is so common that doctors come in contact with it every day, demonstrating itself in inflammation of the female

---

* Read before the Barbour-Randolph-Tucker County Medical Society at Philippi, West Virginia, on May 15, 1929.

urinary tract, cystitis, pyelitis, surgical kidney, vulvitis, endometritis with adherent placenta, postpartum hemorrhage, subinvolution, pyosalphix, peritonitis, syphilitic, macerated fœtus, and many other fœtal diseases. These need only to be mentioned to show that the husband is directly concerned in our discussion.

Too frequent intercourse during gestation may cause abortion or premature labor. Coitus in the latter weeks of pregnancy may cause infection of the uterus, which will show up during and after delivery in a sometimes fatal puerperal fever. Many women have a marked distaste for intercourse during this period, while in others the desire is markedly increased. Parvin devotes much space to this subject, and refers to the distaste for coitus in the wife as one of the signs of pregnancy.

Other reasons given are more or less fanciful, such as that it makes the child sensual, weakens it physically, and tends to create a loss of respect for the husband by the wife. African tribes and other savages forbid it. The Medes and Persians punished men heavily for the act. The females of the lower animal life will not permit the act during gestation—yet men persist.

The leading of clean, hygienic lives, both in body and in mind, desisting from late hours, frequent excesses of all kinds, alcohol, cigarettes, tea and coffee, should be strenuously urged. To be well born one must go back many generations. It is certainly mandatory that we begin now to provide in a measure for our long-neglected posterity. Only in the human species are the laws of procreation thus defied and the influence of heredity, disease and habits all set at naught and the propogation of the species left to chance, convenience, and even to lust.

Women call upon the doctor and engage him earlier now than formerly—earlier among the better class than among the poorer; earlier in the city than in the country; earlier in the United States than in almost any other country—a practice which should be encouraged, inasmuch as it enables the doctor to learn the habits and constitution of his expectant patient and better prepare her for her ordeal. No gravida should change her mode of living, except her habits and environment be bad, in which case she must be taught proper hygiene.

Incontestible evidence exists to prove that the offspring of alcoholic parents is very often weak, puny, imbecilic, epileptic, with a tendency to insanity, drug addiction, venereal disease, hemophilia, nephritis, and crime of every kind. These facts of value in the history of individual cases will shed light on many complications in the course of pregnancy and parturition, indicating means and measures in preventing and treating abnormal conditions. Prenatal study and treatment of a child will do much to reduce infantile morbidity and mortality. After a girl is born, much can be done to correct an evil ancestry and prevent such diseases as would affect her procreative fitness. Few women, in rearing a daughter, consider the possibility of her future pregnancy and labor, consequently being no help in any way to their accomplishment. Some women believe in and exercise some principles of maternal influence during their period of gestation, doing things which seem to provide most for a normal and healthy offspring.

The belief that if a pregnant woman should see an ugly or terrifying object it would be reproduced in the child, dates from remotest antiquity and has spread all over the world. The biblical story of Jacob and "the speckled and spotted kine" possibly existed in those days. Some of the greatest novelists have used the idea as a pet theme, and many great names in medicine and other sciences have supported it. Nevertheless, recent writers call the belief a superstition—not only absurd but harmful.

Many women see ugly or striking scenes during pregnancy and anxiously await labor, expecting to see the baby marked. These fears are seldom realized. We do know that physical, mental, temperamental and emotional traits in either parent are transmitted to the offspring, but when an expectant mother comes with the question, "Could anything I have done or seen affect my baby?" we can conscientiously answer "No." In the present state of our scientific knowledge there is no basis for such fears. We will admit, however, the influence of heredity, which as yet we can not explain.

Dress.—Dress should be simple and warm, yet not heavy enough to be cumbersome. All clothing should be suspended from the shoulders. There should be no constriction of any part of the body, which means that corsets, waistbands, round garters, and any and all other binding clothes should not be worn. The Latin term for the condition of pregnancy was *encienta*, meaning "without girdle." Multiparæ with tendency to pendulous abdomen, and some primiparæ, will find that, toward the end of gestation, a light-weight, woven abdominal supporter will lend to the comfort and wellbeing of the patient. Some women who wish to, and do, conceal pregnancy for several months by tight lacing, often

do it at the expense of the child, the result shown in a club foot or a wry neck.

All expectant mothers should be advised to sleep on alternate sides, and, after middle term, may massage or gently knead the abdomen once a day, thus moving the child out of any cramped position. The gravid uterus, gradually growing heavier all the time, naturally makes an angle in the small of the back which is much aggravated by high-heeled shoes, consequently she should wear low heels and one number larger than is her custom when not in the gravid state.

Diet.—The diet should be simple. Her portions of meat and meat-broths should be small. Starches, fried in fat, and rich pastry should be avoided. Cereals, vegetables, and fruit should be eaten freely. Water should be taken *ad libitum*, as well as milk and buttermilk. Alcohol should be absolutely forbidden because of its demonstrable influence on the offspring. Coffee and tea tend to make the patient nervous and sleepless, and should be avoided. Some books advise a special diet to reduce the bone salts in the fœtus, which should not even be considered, because the mother's health would be first affected, and if any such results were obtainable it would probably be fœtal rickets. It is essential that the mother's diet be rich in all the vitamins, with plenty of calcium phosphate and iron. Milk, butter, and fresh, leafy vegetables, therefore, should not be missing from her daily diet. In general, her ordinary habits should not be interfered with unless she is inclined to overeat.

Care of the Breasts.—The number of women unable to nurse their infants is numerous and on the increase, the evil effect of which is made noticeable in infant morbidity and mortality. It is a great misfortune for a mother not to be able to nurse her child. The growing girl needs attention in regard to mammæ and nipples, and, as she develops at puberty, should be provided with proper dress to avoid injury and pressure. Many women, during gestation, require some form of support to hold up large, heavy, pendant breasts. The fine Branny scales which form on the nipples, if allowed to remain, form crusts which lead to cracks, fissures and the like, thus increasing chances of infection. The nipples should be bathed frequently and anointed with alboleum, cacao-butter, or any sterile fat. In blond and red-haired women, and others having tender nipples, some astringent glycerite may be used—not too strong. Alcohol should not be used, as it hardens too much. Inverted nipples are seldom improved to any great extent. A certain broadening and rounding out of the breasts, as well as other parts of the body, are incident to pregnancy and aid in beautifying the entire body because of its more mature and matronly appearance. Naturally and properly, every woman of pride is desirous that some preservation of her figure be maintained and that she be not left in some vulgar shape simply because she has become a mother. I believe it was the Roman women who began criminal abortion simply for the protection of the figure. The excessive accumulation of fat in some women seems to be unavoidable, yet is amenable to diet or other rational treatment for obesity. The pendulous and prominent abdomen, caused by tight corsets, high-heeled shoes, and weak abdominal wall, can be avoided by training the girl; first, develop her by active sports the same as those in which a boy indulges—rowing, swimming, hiking, climbing, horseback riding, and anything that will make for health and vigor.

It is not possible to build up a strong muscular system or cure chronic disease during this period, while certain outdoor exercises, such as walking, driving over smooth roads, general household duties, etc., are much advised. Avoid lifting heavy weights, sudden jolts, sea bathing, ocean voyages, and railroad journeys of very great length. Much of this depends on the individual case, since some women do most remarkable stunts at this time with no inconvenience. Some others, however, miscarry upon the slightest provocation. If a patient has a known tendency to prematurely empty the uterus, she should be put to bed at this time and real quiet should be enforced. A patient may go to the theatre, may attend church; but to avoid crowds is always the better and safer plan of procedure.

In some countries, on application, these patients can be cared for four weeks before and four weeks after delivery—a practice that has shown its good effect on both the mother and the offspring.

Cold and hot baths and sea bathing should be avoided because of the danger of exciting uterine contraction. A tepid bath or cool sponging, daily, is an aid to the skin and relieves the kidneys. For profuse sweating, which is sometimes an annoying symptom, a brisk rub with a salt towel, made by simply wringing a bath towel out of a strong salt solution and allowing it to dry, will bring many a gratifying night. Among the poor this advice during pregnancy is usually of no avail; even thought to be harmful. We know the tub bath near to labor might cause infection by polluted water entering the

vagina, so, when possible, we advise the shower; next, a sponge bath.

Care of the Bowels and Kidneys.—After the birth of the child, the bowels should be regularly emptied properly by enema, although proper diet is helpful. Constipation is the rule during the entire period, and if neglected may lead to serious consequences. A long-standing habit, probably existing years before pregnancy, can not be corrected by advice at this time, although one of the first things to do is to form the habit of going to stool regularly and on time, preferably after breakfast. Should no results be obtained (straining is not permitted), the action may be stimulated by an enema or glycerine suppository, plenty of water, proper diet, etc.; *i.e.*, a little system helps greatly. Agar and flaxseed, in combination with certain foods, have been given lately. The injection into the rectum of 4 ounces of olive oil or American oil at bedtime, to be left overnight and supplemented in the morning with soap-and-water enema, may be helpful. With all this, medicine often must be resorted to; possibly cascara in some form, although liquid petrolatum or Pluto water probably should first be tried. Aloes in any combination should be excluded, as they provoke hemorrhoids, which is a complication we should endeavor to avoid.

While on the subject of laxatives, kidney conditions govern largely our choice as the salines are preferable in the presence of swollen feet and puffiness of the face, whether albumen is present in the urine or not. A dose of magnesium sulphate each morning will do much to relieve this. The urine, in these cases, should be examined once each month for the first seven months, at which time tests for albumen, sugar, specific gravity, and casts should be made. For the remaining two months, one examination each two weeks will suffice, except when toxemia or nephritis are present or suspected, when an examination every day will help to prevent an eclampsia, one of the most dreaded complications.

By vaginal examination we should make sure of the diagnosis and save ourselves sometimes a shocking surprise. In suspicious cases, a smear from the cervix and a Wasserman test should be made. The subsequent visits should be made about once each month, including urinalysis, blood-pressure, temperature, and pulse rate. Later, the position and presentation should be made out, and the patient should not be allowed to go into labor with an abnormal presentation. With the plan of delivery now decided upon and the patient informed, the measurement of the pelvis can be more accurately done and is now really less painful, as the soft parts offer less resistance. Auscultation of the fœtal heart is now possible, and the question of sex arises. I do not believe this can be accurately told, but fœtal heart sounds of 150 or above probably means a girl and below 130 a boy. Some other rules have been advocated in the past—and still are, for that matter—but are believed to be less accurate.

It is now that the physician should satisfy himself of his patient's physical fitness for either home or hospital delivery. If the patient is to be confined at home, she should select the best room in the house, which should be light, airy, and easily accessible to the bathroom. Towels, pitchers, basin, sheets, cotton, properly sterilized gauze, etc., should be provided. All home patients should be requested to report any symptoms of annoyance, such as headache, bleeding, diminished urine, nausea, and vomiting. In general, the patient should be treated and managed as a major surgical case.

In closing, the personal experience of the author with three recent cases, two in the Davis Memorial Hospital at Elkins, West Virginia, and one in the home, more than ever remind us again of the necessity of prenatal care and the obligations that each and every country doctor should feel toward the prospective mothers entrusted to his care.

Ergotole

All of the ergot preparations included in New and Non-official Remedies, 1928, are watery extracts and as such, according to the current view, can not contain much of the active alkaloids which are the important constituents of ergot when viewed from a clinical standpoint. With one exception, none is assayed by the U.S.P. method or any other method that will show the content of active alkaloids. The methods by which they are assayed show only, or mainly, the content of putrefactive amines, which have not proved desirable in obstetric work. The referee of the Council on Pharmacy and Chemistry for ergot preparations reported assays of the accepted brands not claiming assay by the official method (except Liquor Ergot-Mulford), which showed the preparations to contain less than 10 per cent of their claimed strength. In other words, they were found practically devoid of specific alkaloids. The Council voted to omit Ergotole, Extract of Ergot Purified, Ergotin-Merck, Liquor Ergot-Mulford, and Secacornin from New and Non-official Remedies.—*Journal A. M. A.*, May 4, 1929, p. 1521.

VINCENT'S ANGINA *

By SOBISCA S. HALL, M.D., *and*
HARRY V. THOMAS, M.D.
Fairmont, W. Va.

Vincent's angina is an acute or subacute inflammation of the mouth, pharynx, and contiguous and contained structures, caused by the *Bacillus fusiformis* and Vincent's spirillum in symbiosis characterized by ulcero-membranous lesions of the mucous membrane and underlying structures. It is believed the primary lesions are restricted to these structures.

The disease is found in all ages, but appears most frequently in young adults, attacking both sexes with about equal frequency. It is usually found in the presence of poor mouth hygiene, and some authors attribute quite a significance to debility. Such has not been the case in our few observations, as most attacks were in young, healthy adults. The presence of dental caries or infected tonsils was constant. The mode of transmission is not yet clear, as it is claimed by some authors (Meade, for instance) that we may have the organisms present in an otherwise healthy mouth without any clinical signs. It is reasonable to believe, however, that contact, as by kissing, is an ideal mode of transmission—six of our own cases were directly so traced.

The ulcers of Vincent's angina may be single or multiple, depending upon the location. If on the tonsil, they tend to be single and unilateral; if on the palate or buccal mucosa, the tendency is to be multiple and confluent, although they may be quite discreet. The ulcer is covered with a grayish-white, pulplike exudate which is easily removed without bleeding, exposing a superficial, ulcerated surface, the edges of which are clearly defined but not indurated. The surrounding area of the ulcer is quite hyperemic. The subacute or chronic form tends to have deep, craterlike excavations (Jackson and Coates). In our own limited experience, it has been observed that often the surface does exude a serosanguinous exudate upon the detachment of the membrane. It is not as marked, however, as in diphtheria. Remotely or secondarily we may have involved also the larynx and bronchi (Jackson and Coates). The organisms have also been found in the discharges from suppurative otitis media, cervical and brain abscesses (MacKenzie). We have seen two cases of bronchial pneumonia following or, rather, occurring concurrently with a profound Vincent's angina of the throat and mouth in men of middle life, with a fatal termination in each case. The terminal phase appeared to be a massive pulmonary edema. Both cases were seen and studied late in the disease, and therapy was instituted too late to judge its efficiency.

The symptoms are fairly constant, but vary according to the period of the disease and extent of ulceration present. The usual picture presented, however, is: First, sore throat of moderate intensity. We have seen two cases that had no soreness whatever, the patients complaining of something "sticking" in their throat. Each had a single ulcer in the tonsil about 1.5 cm. in diameter and not deeply ulcerated.

Second, the temperature is very variable, ranging from normal to 100. It is rare, however, to see the temperature above normal in an uncomplicated case.

Third, cervical adenitis may or may not be present. When the glands are involved, they are only moderately enlarged, and only very slightly tender to pressure.

Fourth, the fetor is quite marked in advanced cases, but may be entirely absent in an isolated lesion.

Fifth, malaise and headache are occasionally complained of, but this, too, is variable.

Sixth, the lesion or lesions are as described above.

Seventh, the diagnosis is made by taking a smear from the ulcer or ulcers and staining with an appropriate dye. Methylene blue or carbol fuchsin has been quite satisfactory in my limited experience.

Differential diagnosis rests between syphilis, diphtheria, carcinoma, and Vincent's angina.

In syphilis, the dark field in a primary lesion will give the diagnosis, while in secondary syphilis the Wasserman or Kahn test will be an aid in the diagnosis. According to Jackson and Coates, the edges of the ulcer in syphilis are much more indurated. In our limited experience it has always been quite difficult to differentiate between primary syphilis of the tonsil and a chronic Vincent's ulcer of the same region. A blood test is always resorted to.

In diphtheria, the diagnosis is made quite easy by smear and culture. In this condition, as a rule, the systemic reaction is usually more severe, and the detached membrane leaves a rather profuse hemorrhagic base with a much shallower crater. The areola is also less marked.

In carcinoma of the tonsil, the differentiation is made by biopsy. In this condition we have a much harder margin to the ulcer, the crater is quite deep, and there is little or no membrane present.

---

* Read before the Academy of Medicine of Parkersburg, West Virginia, on September 5, 1929.

The treatment for this condition has seemed to us to be entirely too conservative. It seems logical to treat this condition as though it had invaded other structures (ear, bronchi, brain) that we can not see, and not just treat the local lesion until it is objectively healed. Fatal termination of neglected Vincent's angina has been seen in our own practice. The treatment may be divided, first, into immediate, and, second, remote. The immediate treatment may be (*a*) local, or (*b*) systemic; or, preferably, combined. Locally, silver nitrate in ten to fifty per cent strength, applied to the lesion, has been quite satisfactory in our experience. This treatment is combined with a perborate mouth-wash and gargle, which is usually prescribed as follows:

℞—Olei Menth. Pipp. 5
Saccharini 5
Sodii Perboratis . . . . . qs. ad 240
Sig.—In hot water and use as mouth-wash and gargle qlh.

Systemically, we feel that, when it is at all possible, neoarsphenamine or a related arsenical should be given intravenously to clean up any hidden foci or lesions. The disappearance of the local lesions under local medication may simply lull us and our patient into a sense of false security. We are familiar with a young dentist, living in one of our larger cities, who developed a cough, was studied carefully and given the diagnosis of Vincent's angina of the lungs. Neoarsphenamine was administered, with complete relief from symptoms. Usually, two or three doses of six-tenths gram neoarsphenamine will clear up the most obstinate case. We have our first failure to see, where the combined therapy was instituted in about one hundred and fifty cases.

The remote treatment is just as important as the immediate, if the patient is to have complete and permanent relief; and its importance can not be too strongly urged if recurrences are to be prevented and fatal terminations guarded against.

The dentist should be consulted immediately upon convalescence, and appropriate treatment instituted. Infected tonsils should be removed immediately upon complete recovery, as they seem to bear a direct relation to recurrences. We have never seen a case of Vincent's angina develop in the absence of tonsils and in the presence of good dental hygiene. We would not advise extraction of teeth, nor tonsillectomy, in the height of active infection, as a spirillemia could result from such procedure.

The prognosis is usually good if appropriate treatment has been instituted and complete eradication effected. Most cases respond to the combined treatment—nitrate of silver locally, with a perborate as a gargle and arsenicals intravenously—in thirty-six to seventy-two hours, a cure being subjectively secured in seventy-two hours. Objectively, the lesions are healed in five to seven days. Recurrences are the rule unless a complete eradication has been effected. We have, in our own records, three cases of recurrence—one in three months and two in six. They were treated by the combined method, but on convalescence they neglected to have the dental care needed and tonsillectomy. Two of these, upon their second convalescence, had their dental care and tonsillectomies, and have been free ever since—one for eighteen months and the other for twelve. The third has also remained free, in the presence of diseased tonsils, for eight months. It would seem that recurrences are the rule unless the follow-up treatment is instituted.

In closing, we would urge that this condition be treated more energetically (and shall we say more thoroughly?), by using a systemic cure as well as a local one. It is possible to have a hidden lesion in the chest or ear that may continue to be active after the visible lesion has disappeared. Death has been known to follow in these cases. That there is a systemic defense activated by infection, as in diphtheria or typhoid, we have no evidence to support, and until such is proved, either clinically or experimentally, it would appear that we should supply such specific properties in the form of an arsenical intravenously.

BIBLIOGRAPHY

1. Meade: *Diseases of the Mouth.* Third edition; pp. 362-363.
2. Emerson: *Clinical Diagnosis.* Fifth edition; p. 41.
3. French: *Index of Differential Diagnosis.* Third edition; pp. 379, 612, 613, 614.
4. MacKenzie: Second edition, Vol. 1, p. 36.
5. Jackson and Coates: *The Nose, Throat and Ear, and Their Diseases,* pp. 242, 243, 246, 247, 248, 249, 283, 288, 289, 518, 825.

Phenobarbital

Phenobarbital is the name given by the Revision Committee of the U. S. Pharmacopœia for the product introduced as luminal. Jobbers supply luminal on orders for pheno-barbital-U.S.P. In the past this has been the only thing which they could do, as the Winthrop Chemical Co., Inc., proprietors of luminal, own the patent for this substance. The patent expires, however, May 7, 1929, and several manufacturers are already preparing to put non-proprietary brands of phenobarbital-U.S.P. on the market after that date—which, of course, will be sold under the official name.—*Journal A. M. A.*

CASE REPORTS

SPINA BIFIDA *

By B. L. LIGGETT, M.D.
Mill Creek, W. Va.

Spina bifida is a condition of imperfect development of some portion of the posterior aspect of the spine, with or without a similar affection of the spinal cord and membranes. The defect, according to some authorities, dates from early fœtal life. This condition is frequently associated with other anomalies of development, such as cervical rib, syringomyelia, hydrocephaly, or club foot. The spinal cord is developed from the epiblast. Normally, the cord is separated from the overlying skin by an intrusion of the mesoblastic elements, from which the vertebræ, muscles and ligaments are developed. The laminæ of the spinal vertebræ, in normal cases, unite behind the spinal cord to form the spinous processes. In spina bifida the laminæ do not unite, but remain widely separated, leaving a cleft where, normally, we find the spinous processes. This condition of fissure or cleft of the spinal column, where only a few vertebræ are involved, is known as rachischisis partialis.

The names applied to the different forms of spina bifida depend upon its anatomic structure:

1. A simple bulging of the distended membranes is called a meningocele.
2. If the spinal cord is included in the hernial protrusion, it is a myelocele.
3. If the central canal of the spinal cord becomes dilated at the defective part of the spinal column, and a hernial pouch made up of the cord and its membranes develops, it is called a syringo-myelocele.
4. When the accumulation of fluid takes place in the anterior subarachnoid space and the cord elements are pushed back and form a part of the tumor covering it, it is called a meningo-myelocele.

On May 26, 1929, I attended an obstetrical case (Mrs. A. W. R.) and delivered a female baby afflicted with spina bifida (syringo-myelocele). The mother was a healthy white woman, 18 years of age. The father was small, poorly nourished, and had bone abscesses. His age was 21 years. The parents have a healthy, living child, age two years. The first labor was said to have been long and difficult. Labor in the recent case lasted about 15 hours. The membranes ruptured early in labor and several hours before the head was engaged. On first examination the floating head was high in the abdomen, and all but out of reach. Three hours later, and after moderately severe short pains, the head was palpable but not engaged. After another three hours the head was firmly engaged in R.O.A. position. After the head entered the bony inlet the course of labor was slow, but otherwise not remarkable. Delivery was accomplished without lacerating the perineum.

The baby weighed seven and one half pounds (3402 gm.); head measurements, occipito-frontal circumference 15½ inches (39.4 cm.); suboccipito-bregmatic, 14½ inches (36.8 cm.) The fontanels were large and contrary to the usual relation between the two; the posterior was larger than the anterior. The posterior or triangular fontanel measured three inches (7.62 cm.) between the corners, the anterior or diamond-shaped fontanel measured two and one half inches (6.35 cm.) across the head and one and one half inches (3.81 cm.) anterio-posteriorly. The parietal bones were separated, forming a broad suture line. The distance or space between the fontanels was only one inch.

At birth the posterior fontanel was covered by a moderate-sized caput succedaneum; forty-eight hours later, when all measurements were taken, the caput had disappeared but the fontanels were slightly bulging. Digital examination during labor revealed no crackling craniotabes.

On the child's back there was an elliptical, flattened, cystic tumor, raised at the margin and covered with a delicate, transparent membrane. Through the membrane and fluid it was possible to identify the spinal cord, which showed a linear groove along its entire course. The groove was probably the remains of the central canal of the cord, the entire posterior half being thinned out into the tumor covering. At birth the tumor was very much flattened and almost devoid of fluid, due, no doubt, to a small rent in the membrane which let the fluid escape during delivery. Measuring from the edge of the normal skin, the tumor was two and one half by two inches. Forty-eight hours after delivery the tumor was rounded up and filled with a transparent, light straw-colored fluid. A part of the fluid was drawn off through a sterile needle, but this had no apparent effect on the fontanels; neither did pressure on the fontanels increase the size of the tumor. The tumor extended from the lower dorsal to the first sacral vertebra. Along the lateral aspect of the tumor, at the edge of the normal skin, could be felt bony prominences, the ununited laminæ of the spinal

* From *Proceedings of Davis Memorial Hospital*, Elkins, West Virginia, July, 1929.

vertebræ. The vertebræ in this case were shaped like a crescent, with the points directed backward, and were palpable at the margin of the tumor.

On June 29 the tumor was very much rounded out and full; the fluid was partially drawn off. The fontanels were distended and firm. The head measurements at this time were: occipito-frontal circumference, 18 inches; suboccipito-bregmatic, 17 inches. The baby was able to move the feet and legs normally. Baby died June 30, 1929.

Comment.—The large, bulging fontanels and rapid growth of the head (two and one half inches in circumference during the month the baby lived) were very suggestive that hydrocephalus was associated with the spinal defect.

ABSTRACTS

Cause of Hypertension of the Greater Circulation

Eli Moschcowitz, M.D., New York (*J. A. M. A.*, Vol. 93, August 3, 1929, p. 347).—In a most interesting discussion on the circumstances in which hypertension of the greater circulation occurs, the author stresses the psychic factors, the type of individual who is the antithesis of the child in psyche and develops a characteristic physique which he describes, the apparent greater importance of familial and environmental influences and the conditions of modern life which produce the type of individual described accounting for the gradual increase in deaths from hypertension disease. The author also believes that the development of hypertension following exophthalmic goiter is influenced by psychic factors. Among the other established causes of hypertension are mentioned congenital peripheral resistances, tumors of the suprarenal gland, and certain phases of glomerulo-nephritis. In other words, the causes may be psychic, endocrine, or mechanical. He further believes there is every evidence that the menopause is not the cause of hypertension; it represents merely the critical age period in which hypertension is more liable to occur. M. C. B.

Use of Cinchopen

For those of us who have used cinchopen and neo-cinchopen in the large doses originally recommended by the researchers on the effects of this drug in arthritis, an article by Herbert S. Reichle, of Cleveland, in the *Archives of Internal Medicine* for August, 1929, is very timely. It is entitled, "Toxic Cirrhosis of Liver Due to Cinchopen." He states that massive doses, particularly when continued over a long period of time, may be fatal, and reports two fatal cases of cirrhosis of the liver apparently due to such administration.

In 1922 Schroeder reported seventeen cases showing toxic symptoms, and later attention has been drawn to the toxicity of this drug as evidenced by headache, gastrointestinal disturbances, and icterus.

He mentions the fact that natural idiosyncrasy may be of importance, and notes a case of toxic effects after the ingestion of fifteen grains.

He calls attention to the frequent occurrence of jaundice and gastrointestinal symptoms which have not always been considered significant, but he believes that many of these cases will have permanent cirrhotic changes which will lead to a diminution of liver volume and interference with the portal circulation.

In seven autopsies which he has seen recorded, and in two of his own, there was evidence of "hepatitis" or a degeneration of the parenchyma of the liver, with degeneration of other parenchymatous organs.

In conclusion he says that forty-seven cases have been published and ten deaths have resulted. In all cases there is evidence of serious damage to the liver, and adds a warning that every patient who receives cinchopen should be observed for gastrointestinal symptoms, rashes or icterus, which calls for an immediate withdrawal of the drug. R. D. R.

The Bacteriology of the Blood and Joints In Chronic Infectious Arthritis

Russell L. Cecil, Edith E. Nichols, and Wendell J. Stainsby (*Arch. Int. Med.*, May, 1929, 43: 571-605).—This report is concerned principally with the blood and joints in a series of 78 patients suffering from chronic infectious arthritis studied during the past two years at the Cornell Clinic. After a brief review of the literature, a description of the type of patient studied, the methods used, the cultural and biological characteristics of the streptococci isolated from the blood and joints are reported, as well as statements concerning observations relative to the relation of streptococci recovered from the blood to those isolated from joints and other foci of infection, and findings in experimentally produced chronic infectious arthritis in rabbits. They conclude that in 61.5% of the 78 cases a streptococcus can be isolated which in 83.3% of the cases are culturally and biologically identical, and appear to be

attenuated hemolytic streptococci; that these streptococci can sometimes be cultivated from one of the affected joints in the same patient or other focus of infection, which when injected intravenously into rabbits in a majority of instances produce a chronic, non-suppurative polyarthritis, from which joints and blood the organism can again be recovered. These observations tend strongly to confirm the theory that chronic infectious arthritis is a streptococcal infection, caused in a large proportion of cases by a biologically specific strain of this organism. The presence of this specific strain of streptococcus in the blood of several patients with advanced arthritis deformans goes far to corroborate the view already widely held that arthritis deformans and chronic infectious arthritis are one and the same disease. M. C. B.

Low Residue, High Caloric Diet

In discussing diet applicable in inflammatory diseases of the intestines, and taking up the subject of rest of the bowel in disease of the gastrointestinal tract in general, George E. Knappenberger, M.D. (*American Medicine*, November, 1928), states that we must consider a diet from the standpoint of food value, amount of residue, laxative properties, digestibility, fermentative and putrefactive qualities, coarseness, muscle, nerve or chemical irritability. Sufficient carbohydrates, proteins, fats, water, salts and vitamins must be supplied. The greatest number of calories with the least residue is important.

The diet must be appetizing and not monotonous. Irritating foods, because of too much bulk in residue, excessive laxative action, coarseness, and general indigestibility, should be omitted. Vegetables, some fruits, various condiments and indigestible substances such as pickles, olives, husks, rinds, etc., come under this head. Fried foods, excess fats, coffee and tea, iced drinks, hot breads, and sweet milk should also be excluded. In this connection a detailed ménu is given.

Proper nourishment in intestinal disease is important. A low residue diet is indicated in any intestinal inflammation, irritation or infection. The diets suggested are those that should be chiefly "absorbed before reaching the colon, thereby reducing peristalsis and irritation."

Newer Aspects of Acidosis

McKim Marriott and Alexis F. Hartmann, St. Louis (*Journal A. M. A.*, Dec. 1, 1928), present the composition of the blood plasma in regard to its total electrolyte and total osmolar concentration and discuss the factors which influence such concentrations and which give rise secondarily either to "acidosis" or to "alkalosis." From the study of the composition of normal blood plasma it is shown that of chief importance in regulating the hydrogen ion concentration of the plasma is $BHCO_3$ (with H_2CO_3) and of chief importance in maintaining a normal total electrolyte concentration are, first, BCl and $BHCO_3$, and next, in the order of their importance, base protein, base phosphate, base lactate, and base bound to undetermined acid. In addition, such nonelectrolytes as urea and dextrose contribute to some extent to the total osmotic pressure. By actual freezing point determinations there is indicated a total osmolar concentration of solute in the plasma equivalent to 310 millimols. The theoretical osmolar concentration as calculated from the individual soluble concentrations (excluding undetermined acid), as indicated in the table, is 290 millimols, or 93 per cent of the observed. The most common and important conditions in which deviations from the normal composition of the plasma occur are: (1) severe anhydremia; (2) diabetes, and (3) nephritis. The changes in the blood plasma in these conditions are discussed. The authors recognize as contributing factors of these more common acidoses: (1) increase of normal acids such as lactic, phosphoric and sulphuric; (2) loss of fixed base, and (3) maintenance or failure of maintenance of normal osmotic pressure. The explanation of the means by which such factors operate lies in the analysis of the effects of: (1) dehydration due to diarrhea, vomiting or polyuria; (2) abnormal metabolism giving rise to abnormal organic acids, and (3) failure of the kidney because of oliguria or actual renal injury to adjust by urinary secretion for such changes. Since the chief factors operating to produce acidosis in cases of marked diarrhea and anhydremia are water loss and loss of base bicarbonate by the bowel, the correction of this type of acidosis should be logically by the administration of water and sodium bicarbonate. Water must be administered parenterally. Until very recently, physiologic solution of sodium chloride or Ringer's solution was largely used for this purpose. Their effect, however, is frequently deleterious in that their administration is followed by a retention of the salt, especially in those cases in which, because of continued diarrhea, the resultant oliguria prevents adequate urinary excretion of chlo-

rides. This results in a partial substitution of BCl for $BHCO_3$ in the plasma, as would be expected, since in normal infants and in those whose plasma contains an excess of bicarbonate (alkalosis), salt administration is followed by the secretion of bicarbonate in the urine. In the infant with acidosis and anhydremia, salt administration seems to have a similar effect; that is to say, it increases the acidosis.

The administration of dextrose solution rather than saline solution is indicated. This should be given in isotonic solution (5 per cent) either intravenously or intraperitoneally, and its administration should be continued as long as anhydremia persists. When the plasma bicarbonate is greatly reduced, sodium bicarbonate must also be given in amounts sufficient to prevent the carbon dioxide content of the plasma from falling below 30 per cent by volume. Because of the difficulty that is occasionally encountered in administering solutions intravenously in young infants, it is of advantage to administer water, dextrose and alkali by the intraperitoneal route. This can be done, provided the reaction of the solution used is close to that of the blood (p_H 7.4). A sodium bicarbonate solution may readily be brought to this reaction by bubbling carbon dioxide through it. A drop of phenolsulphonephthalein serves to indicate when the desired reaction is reached. The oxidative removal of such lactic acid as may have accumulated is favored by the restoration of a normal blood volume and circulation through fluid administration and by oxygen inhalation. The treatment of diabetic acidosis with insulin and water is, in many cases, adequate. When the plasma bicarbonate is greatly reduced and is but slowly replenished, administration of alkali is effective in relieving the acute symptoms of acidosis and its administration is indicated. The lactic acid acidosis of acute nephritis can be relieved readily by any method that relieves convulsions and anoxemia. The administration of sedatives and of oxygen is therefore indicated. In the persistent acidosis seen in severe chronic nephritis, little can be done in the way of reducing accumulated acid. Oral administration of such salts as calcium acetate has some effect in causing excretion of phosphate by way of the bowel. The other and more serious factor of nephritic acidosis, the diminution of fixed base, can be met by the administration of alkali in addition to that present in the ordinary diet. In mild cases, a diet can be constructed that has a more alkaline ash than the usual one. In severe cases, in the absence of vomiting and diarrhea, additional alkali may be given by mouth or intravenously. An mild or even moderately severe chronic acidosis in the presence of nephritis may persist for years and apparently not cause any harm of itself. The acidosis may even prevent the occurrence of tetany and in this way may be beneficial.

The Significance of High-Grade Anemia in Chronic Nephritis

E. P. Scarlett, M.D., Iowa City, Iowa (*American Journal of the Medical Sciences*, Vol. 178, August, 1929, pp. 215-228), presents four cases in each of which hypertension, cardiac hypertrophy and renal changes were either absent or of negligible degree and in which anemia was the chief clinical finding. In each instance the anemia was so prominent that at first it was considered the primary disease. He states that the diagnosis in such cases is evident by the finding of retention of blood nitrogen constituents; that the anemia serves as an important differentiating point in the diagnosis. He quotes Brown and other observers who have shown that severe anemia in chronic glomerular nephritis have practically the same serious prognostic significance as blood creatinin values of 5 mg. per 100 c.c. or over, indicating a fatal termination within a two-and-one-half year period. He also states that one must be careful to distinguish those cases of chronic glomerular nephritis of the so-called hemorrhagic type. In each of the four cases reported the onset of the illness was sudden. The average count of erythrocytes in fifty-one cases of chronic nephritis with anemia was 2,780,000; hemoglobin, 51; urea nitrogen, 86.3 mgms. %; creatinin, 9.3 mgms. %; color index, 0.9. M. C. B.

The Serum Treatment of Diphtheria and Its Results.

Yngvar Ustvedt, M.D., of the Municipal Hospital, Ulleval, Oslo, Norway (*International Clinics*, December, 1927), states that we must remember that diphtheria is a local process effectuated by the action of the diphtheria bacillus in the mucous membrane of the throat, where the bacillus produces the toxin. This toxin goes into the lymph and blood and is transported to the organs and cells to which it has affinity. When the toxin is anchored to the cells, then it is difficult and after a short time impossible to loosen again the combination. Therefore, it is necessary to give the serum as early as possible. The effect of the antitoxin is prophylactic, *i.e.*, the antitoxin is to bind the toxin before it is resorbed

or at least before it is anchored to the cells. We have no means to measure the quantities of toxin which are produced in human diphtheria and must remember that the local diphtheria process may stop and the membranes disappear while the organism is still flooded with toxin. Clinical experience teaches that if we use antitoxin early enough, the local process will stop and the diseased recover without further symptoms. If the antitoxin is supplied later, the life can be saved; but there will come symptoms from the heart or paralysis of peripheric nerves. Another point of great importance is the way of application of the serum. It seems that the intravenous method should be used generally; but we know that the anaphylactic shock comes on much easier and stronger by this application. The danger is much less with the subcutaneous and the intramuscular application than with the intravenous. After an intramuscular injection, effect can be seen in twelve hours, but generally there is no real influence on membranes and fever before 24 or 36 hours. The strongest evidence of the specific effect of the serum is that for 33 years Ustvedt has not had a single child with larynx-diphtheria after being so treated. Another interesting point in the statistics is the difference in mortality between the towns and the country. Before the antitoxin treatment the death-rate was nearly the same, but now it is much less in the towns than in the country, probably because the doctor is called sooner and the serum used earlier. As to the quantities of serum: For the non-toxic cases a comparatively small dose will suffice to stop the progression of the local process and the production of toxin, that is, 6,000–8,000 units. If the temperature does not fall, the forming of membranes does not stop or instead increases, repeat the dose. Age does not matter. In larynx-diphtheria Dr. Ustvedt gives 10,000 units to small children; adults often get 20,000 units. In toxic cases he ordinarily gives an intramuscular injection of 20,000 units, and after two or three hours 10,000 or 12,000 intravenously. The same doses are repeated in the severest cases after twelve hours, and always the next day, often also the third day. It is seldom that he does not reach a total amount of 80,000–100,000 units. Serum sickness is much more frequent after a large dose, but may follow a small one. It is of importance to know that the serum sickness is never dangerous, there being no case of death reported from this disease, in contrast with anaphylactic shock, which comes immediately after the injection.

TUBERCULOSIS ABSTRACTS

Tuberculo-Complement Fixation

In tuberculous infection, the bacillary focus, acting antigenically through blood-stream absorption, tends to stimulate the patient's serum to the production of a thermostabile substance commonly referred to as reagin or amboceptor. This substance is highly specific for the antigen. In the presence of complement (a thermolabile substance present in any fresh blood serum, whether normal or immune), this reagin will combine with both antigen and complement. If a tuberculous suspect's serum is mixed, in the presence of complement, with an antigen specially prepared from boiled tubercle bacilli, the disappearance of complement from the mixture connotes antigen-reagin-complement union — which means that the suspected serum contained the tuberculosis reagin; *i.e.*, was positive. (This disappearance of complement is demonstrated, as in the Wasserman reaction, by mixture with a hemolytic system in which suspended erythrocytes are the antigen and serum hemolysin the reagin; if there is no hemolysis, it is clear that complement has been previously "fixed" by the tuberculosis reagin and the reaction is positive.) A quantitative technique and accurate titration of antigen make it possible to embody the foregoing immunological principles in a diagnostic test. It is necessary to parallel the test with the Wasserman reaction, since a positive tuberculo-complement fixation is of little significance in the presence of a positive Wasserman reaction.

Though in its earlier years tuberculo-complement fixation appeared to be of doubtful value, when skillfully performed the test now gives, within reasonable limits, distinctly reliable information. This demonstration of the test's true worth is due almost entirely to the work of such men as Petroff and Woolley in standardizing technique, antigen, etc.

According to Woolley, "With accurate technique the reaction is positive in 60 to 80 per cent of cases, depending on the stage of the disease." Blood-stream absorption from the tuberculous focus is necessary to produce reagin production. And there must be sufficient absorption to stimulate an excess of reagin over the amount necessary to fix the lesion-produced antigen. (It is the failure of this excess which accounts for the low reagin curve in terminal stages of the disease.) It is apparent, therefore, that a positive reaction is of far from trivial significance and may

be taken to mean activity in the sense that the focus is producing very definite systemic absorption. The fact that this absorption may be quantitatively insufficient to occasion symptoms or physical signs in a measure invalidates the test as an index to the extent of clinical activity. Nevertheless, a strongly positive and persistent reaction is very suggestive evidence of impending if not actually existent clinical activity.

On the other hand, in a patient with definite symptoms and physical signs pointing to active tuberculous disease, a negative reaction by no means excludes tuberculosis; for, as previously stated, the reaction measures merely the *excess* of blood reagin (which is occasionally nil, *e.g.*, in overwhelming or terminal infections). The real usefulness of the negative reaction is in differentiating tuberculosis from such conditions as bronchiectasis, certain forms of chronic bronchitis, and interstitial pneumonia.

Cell Sedimentation Test.—Several other recently proposed serological tests for tuberculosis may be briefly mentioned. A definite relationship has long been recognized between certain physiological and pathological states and the rate at which the cells in citrated blood settle on standing. Westergren (1921) observed what he believed to be a diagnostic type of sedimentation in pulmonary tuberculosis. The test requires so little apparatus and technical skill that it can be performed by any careful physician. Of the various techniques in general use, many of the best features are incorporated in the method of Cutler (1929), which is as follows:

After drawing 0.1 c.c. of freshly prepared sterile 3% sodium-citrate solution through a 20-gauge needle into a dry, sterile 2-c.c. syringe, a vein is entered and blood drawn to the 1 c.c. mark. The syring is then tilted gently back and forth to avoid clotting, and the mixture promptly injected into a Cutler tube. (These tubes have an internal diameter of 5 mm. and are marked in millimeters, beginning with zero at the 1 c.c. level, increasing downward to 50.) The tube is tightly stoppered until ready for reading. Its contents are then thoroughly mixed and the level of the settling cells noted every five minutes for one hour. These data are graphed (with the time in minutes and the level in millimeters). Cutler has described fairly characteristic curves for normality, pulmonary quiescence, slight to moderate activity, and moderate to marked activity—the cell levels at 60 minutes for these groups being 3, 15, 20, and 30 mm. Comparison of a patient's graphs from week to week is of distinct value in clinical management and prognosis. But the test is of little or no differential diagnostic value.

Test for Antibodies in Urine.—Assuming that, in active tuberculosis, antibodies would be eliminated in the urine, Wildbolz (1919) suggested that the urine of tuberculosis suspects might be tested for these by injecting concentrates of it into a known tuberculin-hypersensitive skin and comparing the cutaneous response with that occasioned by tuberculin controls. Lanz (1920) and Imhof (1920) applied fundamentally the same hypothesis to the development of a serum test. Numerous efforts to confirm these observations have led to an accumulation of statistical data that have thus far proved inconclusive.

Flocculation Test.—The flocculation test of Darànyi (1922) is dependent on the fact that a substance (probably globulin) may be precipitated from a high percentage of tuberculous sera by an alcohol-salt solution mixture. Convincing evidence of its real diagnostic usefulness is lacking. Though positive in a very large number of advanced active cases, its value in picking up the early case of tuberculosis is practically nil.

Precipitin Test.—Agglutinin and precipitin reactions in tuberculosis have been very largely abandoned, since a general lack of specificity has militated against any possible clinical application. However, Doan, working with a tubercle-bacillus fraction furnished him by Anderson, has described very recently (May, 1929) a precipitin test which is promising. Though still entirely in the experimental stage, the test is of more than ordinary interest; for, if critical study eventually proves its value, its simplicity of technique might conceivably bring it into very general clinical use.

Comment.—From the foregoing, it is obvious that, today at least, serological methods are of comparatively minor importance in the diagnosis of tuberculosis. Even tuberculo-complement fixation merely furnishes confirmatory evidence for a diagnosis already made by the less technical but more fundamentally important means, such as the study of clinical history, physical signs, and sputum. In the words of Dr. Krause, "The laboratory diagnosis of the ordinary case of tuberculosis can be accomplished by simple methods in an ordinary physician's hands in an ordinary physician's office."—DR. JAMES WYNN, Indiana University Medical School.

THE WEST VIRGINIA MEDICAL JOURNAL

JAMES R. BLOSS, *Editor-in-Chief* - - - - - - - - - Huntington

...ASSOCIATE EDITORS...

J. HOWARD ANDERSON, Marytown — WALTER E. VEST, Huntington — C. A. RAY, Charleston — HARRY M. HALL, Wheeling

THE JOURNAL issued on the first of each month. Entered as second-class matter January 1, 1926. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917. Authorized July 24, 1919.

Subscription to Members ..... $2.00 Per Year
Subscription to Non-Members ..... $3.50 Per Year
Single Copies ..... 50 Cents

OFFICERS

President:
H. M. HALL ..... Wheeling

First Vice-President:
B. F. BONE ..... Moundsville

Second Vice-President:
W. C. SWANN ..... Huntington

Third Vice-President:
J. A. DUFF ..... Martinsburg

Executive Secretary:
MR. JOE W. SAVAGE ..... Charleston

Treasurer:
T. MAXFIELD BARBER ..... Charleston

Delegates to A. M. A.:
JAMES R. BLOSS (1928-29) ..... Huntington
HENRI P. LINZ (1928) ..... Wheeling

Alternates:
A. A. SHAWKEY (1928-29) ..... Charleston
HARRY M. HALL (1928) ..... Wheeling

COUNCILLORS

Chairman of the Council for 1928:
R. H. DUNN ..... South Charleston

First District:
C. W. WADDELL (2-year term) ..... Fairmont
C. G. MORGAN (1-year term) ..... Moundsville

Second District:
C. H. MAXWELL (2-year term) ..... Morgantown
C. H. HALL (1-year term) ..... Elkins

Third District:
JOHN FOLK (2-year term) ..... Bridgeport
J. D. COLE (1-year term) ..... Clarksburg

Fourth District:
ROY BEN MILLER (2-year term) ..... Parkersburg
W. E. VEST (1-year term) ..... Huntington

Fifth District:
J. HOWARD ANDERSON (2-year term) ..... Marytown
H. G. STEELE (1-year term ..... Bluefield

Sixth District:
R. H. DUNN (2-year term) ..... South Charleston
H. A. WALKUP (1-year term) ..... Mt. Hope

¶ All original articles for THE JOURNAL must be made to it exclusively. Communications and items of general interest to the profession are invited from all parts of the state. Notices of deaths, removals from the state, changes of location, etc., are requested.

¶ Our readers are requested to send marked copies of local newspapers containing matters of interest to members of the medical profession. Name of sender should be given.

CONTRIBUTIONS TYPEWRITTEN

¶ Contract with present printer specifies all articles, communications, etc., MUST BE TYPED.

ADVERTISEMENTS

¶ Advertising forms will go to press not later than the tenth of each month. All advertisements must conform to the standard established by the Council of Pharmacy and Chemistry of the A. M. A.

WOMAN'S AUXILIARY

Mrs. R. V. Shanklin, Gary, President; Mrs. T. H. Harris, Parkersburg, vice-president; Mrs. W. C. Swann, Huntington, secretary; Mrs. W. D. Simmons, Slab Fork, treasurer.

Councillors

Mrs. C. G. Morgan, Moundsville, first district; Mrs. Ralph Maxwell, Morgantown, second district; Mrs. H. D. Price, Parkersburg, third district; Mrs. J. R. Bloss, Huntington, fourth district; Mrs. A. G. Rutherford, Welch, fifth district; Mrs. E. S. DePuy, Beckley, sixth district.

Delegates to Woman's Auxiliary of A. M. A.

Mrs. R. V. Shanklin, Gary; Mrs. B. S. Preston, Charleston. Alternates — Mrs. George Jeffers, Parkersburg; Mrs. W. B. Scherr, Morgantown.

STANDING COMMITTEES

Medical Defense Committee

C. G. Morgan, Moundsville, Chairman; H. A. Walkup, Mt. Hope; H. G. Steele, Bluefield.

Committee on Scientific Work

O. B. Biern, Huntington, chairman; G. H. Barksdale, Charleston; A. G. Rutherford, Welch.

Public Policy and Legislative Committee

R. A. Ireland, Charleston, chairman; R. H. Walker, Charleston; James McClung, Richwood; C. R. Ogden, Clarksburg, D. A. MacGregor, Wheeling.

Committee on Medical Education

John N. Simpson, Morgantown, chairman; W. T. Henshaw, Charleston; W. S. Fulton, Wheeling.

Committee on Professional Relations

John R. Shultz, Charleston, chairman, (5-year term); A. G. Rutherford, Welch, (2-year term); W. R. Goff, Parkersburg, (2-year term); Hugh G. Nicholson, Charleston, (3-year term); E. P. Smith, Fairmont, (4-year term)

Workman's Compensation Committee

W. A. MacMillan, Charleston, chairman; C. A. Ray, Charleston; John E. Cannaday, Charleston.

Committee on Public Health

David Littlejohn, Charleston, chairman; John Thames, Charleston; Will McLain, Wheeling.

Surgical Section

Robert King Buford, Charleston, chairman; B. I. Golden, Elkins.

Eye, Ear, Nose and Throat Section

I. D. Cole, Clarksburg, chairman; C. C. Jarvis, Clarksburg.

Hospital Association Officers

R. A. Ireland, Charleston, president; J. S. Turk, Wheeling, president-elect; B. I. Golden, Elkins, first vice-president; W. E. Vest, Huntington, second vice-president; Mr. Joe W. Savage, Charleston, secretary-treasurer.

PRESIDENT'S PAGE

The music of the autumn wind sings low,
Down by the ruins of the painted hills,
Where death lies flaming with a marvelous glow,
Upon the ash of rose and daffodils;
But I can find no melancholy here,
To see the naked rocks and thinning trees;
Each strips to grapple with the winter year—
I see her gnarled hills plan for victories.

I love the earth who goes to battle now,
To struggle with the winter whipping storm
And bring the glorious spring out from the night.
I see earth's muscles bared, her battle brow,
And am not sad, but feel her marvelous charm
As splendidly she plunges in the fight.

—*Edwin Curran.*

THIS poet, without realizing it, sang of the medical profession as well as he did of the yellow leaf. Each autumn we all go down to the sea of medical learning and accomplishment in the ships of what we have observed in the interval of summer. Would that we all had the love of the grappling fight with ignorance and misunderstanding that the above lines assign to earth.

Harry M Hall

EDITORIAL

Mechanized Medicine

"Mechanized medicine—medicine in this "mechanical age"—is before us again. It is rather a clever term and serves to say a lot in a mere two words. This time it is that grave and revered periodical, *The Saturday Evening Post*, in its issue of September 7, that adds its voice, somewhat tardily and quite a little apologetically, to the copious outpouring of magazine articles that are directed for and against the medical profession and its conduct of its activities. Particularly its past.

It would seem, from all this lay literature, that we have lagged behind the spirit of the times—not in discovery or in scientific progress, but in the way we administer our graces. In the *Post* article nothing new is added. We are warned and criticized in the same old way. We fail to reach the multitude. We are urged to consider a departure from individualism. Large, free, endowed group clinics are suggested as being just around the corner. State medicine is held to be a very likely happening if some get their way. The article is fair enough to intimate that people want all the new ideas used in their behalf without stopping to consider the extra cost that these entail. They would not, however, expect to get a new Buick for what a horse and buggy cost.

We are ever and anon being taken to task. It is wearisome. Our services being intangible and this being a "show me" age, we are, to say the least, somewhat helpless; and yet the intangible services of a lawyer, whether he wins or not, are paid without a murmur. It is somewhat puzzling. We fear we do not have the respect of the public for our scientific attainments; but very little for our prowess, our comeback, our red-bloodedness and our fighting spirit.

As we get along in the editorial we note this sentence: "The layman can never be persuaded that there is anything unethical in advertising by a philanthropic or other irreproachable non-profit-making medical organization, but it gives the institute or clinic a distinct advantage over the individual, for, in the profession, advertising by its members is stamped as unethical." The *Post* regards advertising as one of the eternal verities—for that is what keeps it going on, making its millions.

So, on page two we find:

"Unanimous medical approval comes to a complexion soap for the first time from seventy-three of the most eminent dermatologists* in America."

"Dermatologists" is marked with an asterisk, so, like the three wise men following the star, we look at the bottom of the page. Here we find an explanatory note, telling what a dermatologist is, and also that the testimonials are genuine. This is signed by Wm. Allen Pusey, M.D., former president of the American Medical Association, editor of the *Archives of Dermatology*, and professor emeritus of dermatology of the University of Illinois.

We confess we read all this with anything but composure. It is confusing. If a practitioner anywhere in the state of West Virginia should come out endorsing a particular soap or a particular food, or a particular make of antiseptic, in any state paper, tomorrow it would cause amazement. Maybe it might be all right; but even if it happened to be, nevertheless, amazement among his colleagues would follow and, in some parts, perhaps discipline. Why, then, is it all right for Dr. Pusey? And if it happens to be all right for him, why didn't the seventy-three all put their names instead of writing in and then having him verify it? Is one any different from seventy-three? And if it is all right for one or seventy-three, why not five thousand?

We aim not to be querulous nor carping nor quick to find the flaw; but, if it is right for seventy-three dermatologists to write in to Procter & Gamble, it is right for every other medical man to sincerely endorse a cigarette or a condensed milk. Ethics can under no circumstance be made to apply to one individual and not to another. H. M. H.

Authors' Abstracts

The JOURNAL last month carried an editorial requesting the authors of papers published in outside journals to notify the publication board of the WEST VIRGINIA MEDICAL JOURNAL when and where these articles were to appear. It was the idea of the board to have abstracts prepared and published of all articles in outside journals written by West Virginia authors.

The publication board desires to carry this idea one step further, by asking the authors themselves to prepare abstracts of their articles published in outside journals and to send these abstracts to the WEST

VIRGINIA MEDICAL JOURNAL. It is believed that a section of the JOURNAL devoted to "Authors' Abstracts" would be an unusually valuable one. The publication board will greatly appreciate the coöperation of all members of the association in promoting this plan, and requests authors' abstracts from all of the state doctors who have articles published in out-of-state journals.

Group Insurance Again

About one year ago the West Virginia State Medical Association, through its executive offices in Charleston, began work on a plan to offer some form of group life insurance to its members. After eight months of hard work had been put into the idea, it failed. The main reason for this failure was due to the fact that none of the older, better known and more reliable insurance companies would write group life insurance for the members of the association. With one of the smaller companies writing this insurance, most of the prospective applicants felt that the premium rates would be unstable and, consequently, unsafe. In spite of this fact, more than five hundred applications for the group life insurance were received.

A new plan for group insurance for members of the association has recently presented itself. The new plan carries none of the hazards of the first plan and can be operated with much more ease and a much greater safety factor. It is modeled almost wholly from the various forms of Masonic insurance now in force in many parts of West Virginia, and would be operated exclusively by the participants through the association headquarters.

According to the new plan, it will be assumed that 500 members of the association form an insurance group. To start out, each member will pay ten dollars into an insurance fund, creating a fund of five thousand dollars. When any participant in the fund dies, the beneficiary of the deceased will immediately be given a check for one thousand dollars and the remaining members will be assessed two dollars to bring the fund back to its reserve strength. Also, when a member of the group dies, a new member will be admitted to the group to keep it up to the five hundred mark. Of course, in case the group would fall off a few members and would have, for instance, only 450 members, then the death claim would be only nine hundred dollars instead of one thousand.

By forming an insurance group similar to the one outlined above, the participants would be protected at all times and would not be put to the expense of supporting an office to carry on the business of the group. A small assessment of perhaps ten cents would probably be necessary upon each death to take care of the actual stamps, stationery, etc., incident to operation. In case such a group was organized, the age limit would have to be fixed, and would probably be 55 years, or perhaps 60 years. Also, it would be necessary to expel each member of the group who failed to pay any assessment within thirty days.

To say the least, the plan as outlined above has considerable merit and is much more attractive and more simple than the original group plan that was taken under advisement last year. Any comment from the members of the association concerning the new plan would be received with considerable interest by the insurance committee. This committee can be reached in care of the WEST VIRGINIA MEDICAL JOURNAL.

ANNOUNCEMENTS

Dr. A. L. Carson, Jr.

Dr. A. L. Carson, Jr., who has been in practice at Gary and Thorpe, W. Va., for the past several years, left in June for an appointment on the obstetrical service of the Nursery and Child's Hospital, New York City.

Dr. Folk on Vacation

Dr. John Folk, of Bridgeport, councillor of the state association from the third district, is spending the winter at Anacortes, Washington, and will be there for at least one year. He left West Virginia last June and attended the A. M. A. convention at Portland in July. Dr. Folk recently attended a picnic for West Virginians in Seattle, Washington, at which there were 75 persons in attendance.

Post-Graduate Assembly

The international assembly of the Interstate Post-Graduate Medical Association of North America will be held at Detroit on October 21–25, inclusive, 1929. The tentative program has just been issued by Dr. William B. Peck, managing director of the association, and one of the largest sessions in the history of the organization is anticipated.

Included in the list of more than 75 nationally and internationally known speakers are Dr. Leonard G. Rowntree of the Mayo Clinic, Dr. William F. Manges of Philadelphia, Dr. William J. Mayo of

Rochester, Minn., Dr. Joseph Bloodgood of Baltimore, Dr. C. A. Hamann of Cleveland, Dr. John B. Deaver of Philadelphia, Dr. Elliott P. Joslin of Boston, Dr. T. Wingate Todd of Cleveland, Dr. Joseph B. DeLee of Chicago, Dr. Dean Lewis of Baltimore, Dr. George W. Crile of Cleveland, Dr. A. C. Ivy of Chicago, Dr. Charles H. Mayo of Rochester, Minn., and Dr. John C. Polak of Brooklyn.

OBITUARY

J. W. Aylor, M.D.

Dr. J. W. Aylor, who practiced medicine in West Virginia for approximately forty years, died at his home in Culpepper, Virginia, on August 30 at the age of 87 years. He served under Stonewall Jackson during the Civil War, and later entered the University of Virginia medical school, graduating about 1869. In 1870 he located in Leon, W. Va., and practiced there until 1890, when he moved to Charleston. The deceased practiced in Charleston until 1909, returning to his old home and retiring at that time.

COUNTY SOCIETY NEWS

Kanawha County

After the usual period of society inactivity during the summer months, the Kanawha Medical Society opened with its first fall meeting in the public library building, Charleston, on the evening of September 3 with approximately thirty members in attendance. Dr. R. H. Walker, president, presided, and called upon Dr. Russel Kessel, secretary, who discussed briefly a few matters of interest to the society that had developed during the summer.

The scientific paper of the evening was presented by Dr. Hugh Trout, of Roanoke, Virginia, who talked on "The Treatment of Varicose Ulcers." His lecture was illustrated with a motion picture film, showing the technique of the author and the various stages of treatment. Among those who took part in the discussion were Dr. John E. Cannaday, Dr. John W. Moore, Dr. G. G. Irwin, and Dr. W. A. MacMillan.

A most interesting meeting of the Kanawha Medical Society was held in the public library building, Charleston, on the evening of September 17, when Dr. Waitman F. Zinn, of Baltimore, Md., presented a scientific address on the subject, "Indications for Endoscopy." This lecture was accompanied by lantern slides. Dr. Zinn also brought two patients with him from Baltimore, each of whom had been fitted with an artificial larynx, and the patients were used for demonstrating purposes during the presentation of the paper. Dr. J. D. Murphy, an interne at the Mercy Hospital in Baltimore, also accompanied Dr. Zinn to Charleston.

Approximately fifty members of the Kanawha Medical Society turned out for this instructive address. The main discussion was made by Dr. W. S. Shepherd, of Charleston, and a number of questions were asked when the paper was thrown open for general discussion.

RUSSEL KESSEL, Secretary.

Parkersburg Academy

The Academy of Medicine of Parkersburg held its first fall meeting at the Parkersburg Country Club on the evening of September 5, with approximately fifty members in attendance. Prior to the scientific program a sumptuous banquet was served at the country club at seven o'clock in the evening, with President H. M. Campbell presiding.

Guests for the September 5 meeting included the members of the committee on scientific work of the West Virginia State Medical Association, which committee met in Parkersburg in the afternoon to formulate the program for the 1930 meeting at White Sulphur Springs. The guest list included the president-elect, Dr. Walter E. Vest of Huntington, Dr. Howard T. Phillips of Wheeling, chairman of the committee, Dr. Robert King Buford and Dr. G. G. Irwin of Charleston, Dr. S. S. Hall of Buckhannon, and Mr. Joe W. Savage, of Charleston, executive secretary of the state association.

The scientific program for the evening was presented by the visitors and included papers by Dr. Vest on "Pneumothorax," Dr. Hall on "Vincent's Angina," Dr. Buford on "Gallbladder Diseases," Dr. Irwin on "Impotency," and Dr. Phillips on "Syphilis." Mr. Savage also talked briefly upon the work and affairs of the state association and the WEST VIRGINIA MEDICAL JOURNAL. An interesting discussion followed the presentation of the five scientific papers. JOHN T. GOFF, Secretary.

Fayette County

Fayette County Medical Society meeting was held Tuesday evening, September 10, at the Women's Club building in Montgomery. Seventeen members of the society were present, and there were, in addi-

tion, ten guests, including Drs. R. H. Paden and M. F. Peterson, of Charleston; Dr. Dan Nichols, of Slab Fork; Dr. W. R. Snodgrass, of Chicago, Ill., and Mr. Joe W. Savage, executive secretary of the West Virginia State Medical Association.

A portion of the Stuckert film was shown on the screen. H. A. WALKUP, Secretary.

Central Tri-State

Dr. W. F. Marting, of Ironton, Ohio, was elected president of the Central Tri-State Medical Society at the meeting of that organization held at Huntington on the afternoon and evening of September 19, 1929. Dr. Albert H. Hoge, of Bluefield, was elected first vice-president; Dr. L. F. Winans, of Ashland, Ky., second vice-president, and Dr. J. S. Klumpp, of Huntington, secretary-treasurer.

A good attendance turned out for the September 19 meeting and a most excellent program was presented. The program was opened by Dr. H. C. Casparis, of Vanderbilt University, Nashville, Tenn., who presented a paper on "Treatment of Tuberculosis in Children." He was followed by Dr. Leo Buerger, of New York City, who talked on "Circulatory Disturbances of the Lower Extremities." Dr. J. Shelton Horsley, Jr., of Richmond, Va., presented a paper on "Some Observations in Plastic Surgery of the Face." The scientific program was concluded by Dr. Frank Harrah, of Columbus, Ohio, who talked on "Urology in General Practice."

Following the scientific program, a banquet was served at the Hotel Prichard and the election of officers to serve during the coming year was held. There were approximately a hundred and fifty doctors in attendance at the meeting.

Logan County

The regular monthly meeting of the Logan County Medical Society was held at the Hatfield-Lawson Hospital at Logan on the evening of August 23, with twenty-four members in attendance. This was one of the largest meetings the society has ever held. The scientific program of the evening consisted of showing the Stuckert film on obstetrics from the Jefferson Medical College. Dr. R. H. Paden, of the state health department, had charge of the film.

At the close of the scientific program, ice cream and cake were served to those present by the Hatfield-Lawson Hospital. Guests for the evening included Dr. Paden and Dr. David Littlejohn, of Charleston, and Dr. V. A. Desson, who has succeeded Dr. P. B. Wingfield as health officer of Logan county. The senior nurses at the hospital were also guests at this meeting.

Dr. C. A. Davis, of Logan, was elected secretary-treasurer of the Logan county society at this meeting to fill out the unexpired term of Dr. Wingfield, who left recently to become associate physician of Antioch College, Yellow Springs, Ohio.

PUBLIC HEALTH

Typhoid Decline

Typhoid fever, which last year caused the illness of more than 1,754 persons and the death of 175 in West Virginia, is less prevalent this year, according to reports received by the state health department. This statement is based on the fact that, to date, no cities in the state have had outbreaks or epidemics, though a number of cases of this disease have been reported from various sections. Had it not been for the unusual prevalence of a severe form of typhoid in an unincorporated mining camp in McDowell county early in the spring, the death rate for the state from this disease would have been much less than in previous years.

West Virginia Death Rate, 1928

The Department of Commerce announces that the 1928 death rate for West Virginia was 1,015.5 per 100,000 population, as compared with 1,001.7 in 1927.

Increases in rates per 100,000 population from those of the preceding year were from the following principal causes: Nephritis (69.4 to 75.6), cerebral hemorrhage and softening (54.0 to 57.9), cancer (58.7 to 61.3), diseases of the heart (112.7 to 114.3), and diabetes mellitus (9.6 to 11.0). The death rate from influenza was more than doubled (24.6 to 57.7), pneumonia, all forms (64.9 to 70.2), and cirrhosis of the liver (2.8 to 3.9).

Among the decreases in rates from 1927 to 1928 were those from tuberculosis (73.5 to 71.3), whooping cough (19.6 to 3.4), diarrhea and enteritis, under two years (60.4 to 49.4), typhoid and paratyphoid fever (13.2 to 10.2), and measles (5.4 to 3.0).

The death rate from all accidental causes decreased from 144.7 to 104.9, the individual types of accidents showing the greatest decreases being mine accidents (39.0 to 32.0), railroad accidents (9.3 to 7.3), machinery accidents (2.8 to 1.3), and auto-

mobile accidents, excluding collisions with railroad trains and street cars (17.6 to 16.4).

The estimated population in 1928 was 1,724,000 and in 1927 was 1,696,000.

Lead Poisoning

It has recently been stated by Surgeon General H. S. Cumming, of the U. S. Public Health Service, that lead poisoning is one of the great problems of industrial hygiene. In the early part of the nineteenth century, experimental investigations of the action of lead were begun; but it is only during the past twenty-five years that much progress has been made in methods of preventing lead poisoning. The application of knowledge of how to prevent it, together with improved methods in the handling of poisonous materials, will greatly reduce the incidence of this and other industrial poisonings in the future.

The following are some of the principal industries and trades in which workers are exposed to lead: Lead mining and smelting, making white or red lead; the manufacture of paint, storage batteries, glazes, pottery, and most lead objects; printing, painting, brass founding, and polishing cut-glass and brass. In general, all of those who handle lead-containing materials, even such diverse things as putty and window-shades, are exposed more or less to lead poisoning. The state of Maine has had a number of deaths from lead poisoning which were not at all industrial in the ordinary sense of the word. These cases of poisoning were among the people who resided in rural communities and used lead piping to bring spring water to their houses. The lead from the pipes was dissolved and poisoning resulted from using this water. This condition has also been found in many other states.

When a person is exposed to a dangerous amount of lead, he begins to absorb it and his system will show evidence of it very early. There are many people who absorb lead and show its disabling effects and yet do not have acute poisoning. If the amount of lead is insufficient to produce acute poisoning and the worker continues in the occupation offering exposure, he may develop lead poisoning in a chronic form, which is at times harder to overcome than the acute condition.

Symptoms of a disease are those things of which the patient makes a complaint. To him, they are paramount; but the physician may find that there are more serious damages done to other parts of the body, about which no complaint has been made. This is true in lead poisoning. Intestinal cramps are quite prominent and are often the first and most conspicuous symptom that the patient notices; yet, lead damages other organs and tissues far more than it does the intestines. The blood is one of the first tissues to show changes when lead is taken into the body, and these changes may be very marked in cases of heavy exposure.

One of the most painful symptoms of lead poisoning is what is commonly called "lead colic." The action of lead on the intestines produces severe cramping pains. These are usually accompanied by another common symptom, obstinate constipation. This has been attributed to the action of lead on the musculature of the intestines.

Lead is eliminated from the body principally by the kidneys and intestines. A very important thing to remember in exposure to lead is its storage in the bones. While the lead is stored in the bones, it does not produce any harm, apparently. The body, however, makes an effort to relieve itself of this poison, and, as a consequence, small amounts of it are eliminated long after exposure to lead has ceased. This elimination can be hastened by the ingestion of certain substances which bring about chemical changes in the body. Also, illness and excesses, such as alcoholism, bring about chemical changes which increase the rate of elimination of lead from the bones. When it is thus set free again in the circulation, it may produce evidence of its poisonous effects as in the beginning; cases of acute poisoning have been recorded in such instances.

Persons who have been exposed to lead should avoid constipation and otherwise aid elimination in every way. The saline purgatives are of particular value in removing lead; fruits are also very desirable. But, as stated above, there may be danger in too rapid elimination, therefore the treatment should be supervised by a competent physician.

In lead poisoning, as in other conditions, prevention greatly outweighs cure in importance. The responsibility for the prevention of industrial poisoning rests largely on the manufacturer. The worker, however, is also responsible. There are many instances in which the safety measures and devices that are provided are ignored or misused by the employee. The manufacturer should provide adequate safety appliances and educate the employee in their use as well as the rsults of their abuse or misuse, but it devolves upon every worker to help in making the shop a safe work-place, and to minimize the chances of the other fellow, as well as himself, getting dangerous doses of the poisonous substance.

Particular case must be used to avoid dustiness, since the most dangerous cases of lead poisoning are those in which the lead has been breathed in. Personal hygiene and habits are factors in health in any occupation, but they are especially so where the worker is exposed to industrial poisons and other unfavorable conditions in industry.

Endemic Goiter Distribution

Studies conducted by the United States Public Health Service during recent years indicate that the distribution of goiter in the United States, as disclosed by numerous thyroid surveys, parallels in general the goiter findings which were recorded among the drafted men examined during the World War.

There are manifestly wide variations in the methods of determining thyroid enlargement. The classification of various degrees and types of involvement also ranges within wide limitations. Uniform procedure is a necessity if findings in different sections of the country are to be compared.

Based upon the occurrence of goiter, wholesale prophylaxis by means of the use of small doses of iodine, either as iodized salt or otherwise, for endemic goiter is apparently not required in all states.

Individual thyroid surveys disclose foci of endemic goiter in localities not previously regarded as being located in goitrous territory.

Resurveys are desirable for the purpose of learning the extent and character of changes occurring either under natural conditions or after prophylaxis has been instituted.

Out-Patient Clinics

Recommending that the tendency toward over-specialization in clinics be discouraged, without diminishing the efficiency gained through the concentrated attention of physicians upon certain types of work, a report just published by the Associated Out-Patient Clinics Committee of the New York Tuberculosis and Health Association emphasizes the value of promoting complete periodic health examinations of patients receiving treatment in specialized departments.

The medical clinic is pointed out to be the distributing center, as well as the diagnostic focus of the out-patient department. The report treats extensively of the principles of coördination involved, and presents a survey of the functional, educational and administrative relations of the medical clinic under descriptive tites such as "Responsibility for Coördinating Medical Service," "Periodic Health Examinations," "The Medical Clinic and Its Sub-Departments," "Relationship to the Tuberculosis Clinis," "Relationship to Cardiac Clinic," "Relationship to Skin and Syphilis Clinic," "Relationship to Dental Clinic," "Staff Rotation in the Medical Clinic," "Relation Between Clinic and Ward," "Relation to Admissions," "Medical Eligibility," "Medical Clinic and Social Service," "Health Education in the Medical Clinic," and "Equipment for Medical Clinic."

In a foreword to the report, Michael M. Davis, Ph.D., states: "The authors have been wise in dealing not merely with the factors of clinic organization and administration by themselves. They manifest an appreciation that good professional equipment and well-devised machinery of organization can do little more than to create conditions under which the trained physician can do effective work. They recognize that to achieve results with the sick, the personal interest of the doctor in the patient and the personal confidence of the patient in the doctor must be developed and maintained in the clinic. They indicate conditions under which they believe this necessary aim can be accomplished."

In discussing staff rotation, the report deprecates the danger that men working on clinic staffs tend toward an increasing specialization, and may not receive a broad training in general medicine. "Thorough training in general medicine is essential," states the report, "to the proper development of a physician, whether he intends to practice a medical specialty, internal medicine, or general medicine and surgery."

Marked attention is devoted to the demands for social service in the specialties. "The physician's problem is to restore his patient to health, efficiency and earning power at the earliest possible moment. In order to do this, he must have before him all the facts germane to the patient's condition. Confronted with certain symptoms that in themselves are insufficient evidence for a diagnosis, the physician may need data relating to the patient's' personal and family health history, habits, and environment.

"Successful medical treatment often depends on the physician's recognition of the influence which the patient's personality and his social and economic conditions have on prevention and cure. The patient requiring modification of mode of life as well as medication needs social adjustments in order that medical treatment may fulfill its purpose.

"Before treatment can be instituted or completed, it may be necessary to make social adjustments, to

educate in health activities, to influence behavior. Where response to treatment is unsatisfactory, where coöperation is poor, the physician may wish to know what are the untoward factors in the patient's life that influence his reactions. These factors, too often disregarded, must be recognized by the physician in dealing with this patient. It is for the purpose of rendering this service to the patient and thus assisting the physician that medical social work is organized."

The committee responsible for the report comprises: I. Ogden Woodruff, M.D., chairman; Walter P. Anderson, M.D.; George Baehr, M.D.; Jesse G. Bullowa, M.D.; Edward Cussler, M.D.; Theodore Sanders, M.D., and Louise C. Bentley, R.N., secretary.

Copies may be obtained by addressing the New York Tuberculosis and Health Association, 244 Madison Avenue, New York City.

FROM OTHER JOURNALS

Teaching of Massage

Massage, mechanotherapy and physiotherapy being adjuncts of the treatment of the sick, the medical profession is interested in these subjects. Manual massage formerly was a profession in itself. Masseurs in this country at least have added mechanotherapy and in many instances physiotherapy to their armamentarium. Just how far the medical profession should go in backing the formation of an independent school by masseurs to teach these subjects is a question. It is felt by the Council on Physiotherapy of the American Medical Association that the teaching of physiotherapy should be carried on in connection with an established medical institution, as is done at Harvard and Columbia universities.

While the state board of medical examiners now has charge of the licensing of masseurs in Minnesota, this board must, according to the law and quite naturally, depend on professional masseurs in determining eligibility of applicants. Whether a group of physicians should act as an advisory board, to have supervision of the conduct of a school of massage, mechanotherapy and physiotherapy combined, is open to some question. We should be inclined to recommend that the teaching of these subjects be made a part of established educational institutions.

The outline of a proposed independent school of massage, mechanotherapy and physiotherapy, to be established in the Twin Cities, was given publicity in the "President's Letter" in the July number of *Minnesota Medicine*. This should not be construed as an official endorsement of the project, for no official action has been taken nor is likely to be taken by the state medical association. The name, "Basic Science Institute and Sanatorium," proposed for the new school, is misleading and consequently ill chosen.

The practice of massage as a profession in this country has not had the attention or development that it has had elsewhere, for instance, in the Scandinavian countries. Possibly there is need for a good school in this country and in our own state.—*Minnesota Medicine.*

History of Eclecticism

The eclectic system of medical practice had its inspiration from Thompsonianism, which preceded it by nearly half a century. Benjamin Thompson was born in New Hampshire in 1769. He developed a crude philosophy that vegetables give life and minerals death, and began to prescribe for the sick in his community in 1792. His knowledge of botany was very limited. His list of remedies consisted of lobelia, cayenne pepper, and a strong tincture of pungent herbs known as "No. 6," and steam. In 1837 Dr. Alva Curtis, of Ohio, came to the fore as a leader in a system of cure known as botanico-medical. He had more knowledge of botany, and introduced a large number of vegetable remedies, commenced the publication of a journal devoted to his cult, and established a medical college in Cincinnati.

Dr. Wooster Beach, an Ohio man by adoption, born in Connecticut in 1794, died 1841, led a movement in the direction of simple eclecticism and established a medical school at Worthington, Ohio.

In 1845 a much more successful school was established at Cincinnati, called the Eclectic Medical Institute, Dr. John M. Scudder and Dr. John King being the leading figures. Dr. Scudder later originated the system of "specific medication." An American Eclectic Practice was published in 1857 by Jones and Sherwood, and a work on Chronic Diseases by King in 1867, and an American Dispensatory in 1874.

William S. Merrell, after whom a great pharmaceutical house founded by him is named, was a chemist and apothecary and to him and to Dr. John M. Scudder and Dr. J. K. Scudder belongs the credit of having made most important researches in vegetable remedies.

Eclecticism gave a great impetus to the study of vegetable remedies and has contributed much to modern medicine.

During the first twenty years of its existence, the Eclectic Medical Institute graduated 1,800 students. Other eclectic medical colleges were established in many of the larger cities, and eclectic medical societies were organized in most of the states prior to 1880. Legal recognition for eclecticism was obtained from all the states, but not without opposition. Eclecticism had made a place for itself. Since 1880, schools and journals established have gradually been discontinued for lack of support. The general acceptance of the germ theory of disease, the development of rational medicine and the modern trend toward a modified medical nihilism has dominated medical scientific thought for now nearly fifty years, with the inevitable result to a system based on a specific theory.

For several years but one eclectic medical college remained open for teaching purposes, and it is now announced that no students will be matriculated for the coming year.—*Nebraska Medical Journal.*

Can Fats Be Utilized Parenterally?

There are periods of emergency in the lives of many patients when the problem of nutrition by the conventional methods may become seemingly insuperable. The oral intake of food is often laborious for persons who are ill to the extent of physical exhaustion; sometimes, even when strength is not lacking for the first processes of food ingestion, there may be mechanical, pathologic or surgical complications that actually interfere with the swallowing of sufficient sources of nutriment; and, again, the condition of the alimentary tract or its physiologic lethargy and digestive incompetence may defeat every effort at feeding by mouth. Thus, many an occasion arises when some different mode of nutrition would be welcomed. In former years, consoling hopes were placed in the possibilities of rectal alimentation; but they have for the most part been shattered by the experience of many attempts at that method of feeding as well as by the contraindications furnished by physiologic experiments. So long as it was assumed that foodstuffs can be effectively absorbed and utilized if only they are somehow rendered soluble, there was obvious justification for the attempts to introduce milk and eggs and similar food material into the rectum in an attempt to supply nourishment through absorption from the lower bowel. The vogue of rectal alimentation in the gross way just indicated has passed. It is believed today that foodstuffs must be first "prepared" for assimilation by digestive processes so that the smaller chemical fragments, such as monosaccharide sugars, amino-acids and fatty acids, can be directly utilized after entrance into the blood stream. The lower bowel does not ordinarily supply sufficient enzymatic potency to bring about an adequate digestion of complex foods to the stage at which assimilable products alone result when the nutrients are exposed directly to the environment to the last portion of the alimentary canal. Hence the milk and eggs introduced by rectum are poorly absorbed; they are exposed to bacterial influences that invoke fermentation and putrefaction, with resultant irritation of the bowel and expulsion. Water, however, can be absorbed readily; so can a modicum of dextrose, of salts, and perhaps of amino-acids. Rectal alimentation, skillfully and intelligently undertaken, is thus not without some palliative virtues. Indeed, as a mode of introducing water, occasionally also of dextrose and of drugs, the value of such enemas is perhaps underestimated at present.

Other methods of parenteral feeding at once suggest themselves, the nutrients being introduced intravenously, intraperitoneally, or subcutaneously, so that they find speedy access directly to the blood stream. For water dextrose and salts these possibilities are now well known. They suffer from the limitations of the comparatively large volumes of fluid that are required to introduce any considerable quantity of foodstuff daily. An entire liter of isotonic dextrose solution—a large volume to manage at one time—will furnish less than 200 calories. Fats, with their richness in energy, would be an almost ideal food fuel for parenteral use if their utilization in this way could be assured. There have been numerous attempts to inject fats subcutaneously, in man as well as in experimental animals, in the ardent hope that they could be utilized directly. Less than two ounces (57 gm.) of fat will yield 500 calories in the body. The subcutaneously introduced fat has been observed to disappear from the site of injection; usually it has been found to be merely translocated through the spaces of the connective tissues, often accumulating through the influence of gravity in the most pendulous parts of the body. Somehow, even emulsified fats do not penetrate the subcutaneous blood vessels effectively under ordinary tested conditions. Sterile fats may remain segregated for days beneath the skin or in the spaces of the peritoneal cavity.

Now and then, however, there are renewed reports of the successful use of fats by parenteral introduction. Fat has been used as a vehicle for substance

of diagnostic value in work with x-rays, and the possibilities have been subjected to further investigation in the Laboratory of Physiological Chemistry at Yale University by Koehne and Mendel.[1] Usually the reaction to fats introduced parenterally by injection was like that which any sterile foreign body of similar texture may experience. Even in starvation, the fat thus given failed to be utilized better. The Yale investigators point out that when such products as peanut oil, butter oil or coconut oil were introduced, under the presumably favorable conditions of a negative nitrogen balance, they were at best too slowly metabolized to exert a sufficient influence on nitrogen catabolism to make this method of evaluation practicable. It is noteworthy, on the other hand, that the fat soluble vitamins A and D can apparently be utilized and protect the body, even when they are introduced subcutaneously in such fats as butter oil and cod liver oil. In 1925, Bloch[2] used intramuscular injections of vitamin A-bearing fat on a boy with zerophthalmia. Because of diarrhea, the patient could not assimilate food well enough to permit taking the fat by mouth. Bloch was able to cure the ophthalmia by giving the vitamin parenterally. In the case of rachitic rats, the subcutaneous and intramuscular injections were in all cases less effective than the intraperitoneal injections. Cod liver oil seems quite objectionable otherwise. Generally speaking, the response of the tissues of rats to cod liver oil was essentially that associated with any foreign body. The immediate result was a varying amount of necrosis with an associated polymorphonuclear reaction. The oil remained in the tissue as an inert substance and was gradually surrounded by foreign body giant cells. There is no evidence that any of the cod liver oil had been used as a source of energy. Koehne and Mendel have concluded from their extensive studies that, with the possible exception of coconut oil under conditions of nutritive emergency, the investigated oils introduced parenterally are metabolized too slowly, if at all, to be a dependable source of energy to animals. In any event, the technique of administration, including the successful sterilization of fats, is not one that makes a ready appeal to the therapeutist.

1. Koehne, Martha, and Mendel, L. B.: The Utilization of Fatty Oils Given Parenterally. *J. Nutrition*, 1: 399, May, 1929.

2. Bloch, C. C · *Ugesk f. Lxger.*, 87: 1183, Dec. 24, 1925; abstr., *J. A M. A.*, 86: 660, Feb. 27, 1926.

—*Journal A. M. A.*, August 3, 1929.

Southern Medical Meeting

November is the month of rapidly changing weather, gray skies, and frequently of respiratory infections for most of the inhabitants of the United States. But those who dwell in the southern part of Florida know only balmy days and sunny weather in November. While the rest of the world carries its overcoat and umbrella, visitors to Miami don their summer clothes. They go out into the Gulf stream off the Miami coast, in a sail- or rowboat or what may be available, to catch brilliant colored fish, tarpon, amberjack, kingfish, sailfish, and many other beautiful tropical monsters.

Those who are planning a trip for the year will do well to recall the charms of Miami in November. One may play golf on the beautiful links of the city, and then take on a stimulating plunge in the surf. One may step into an airplane and head for Havana, Nassau, or for the remote corners of Central America, since, in the Miami district, flying has progressed as extensively commercially as it has abroad.

The railroads will offer special reduced rates for visitors to the Southern Medical meeting from all parts of the south, and schedules will be conveniently arranged so that those who must make their stay brief will be attracted.

The programs of the general meetings and sections promise to be the most complete and practical that have yet been offered. Nowhere can a physician's improvement be better combined with pleasure than in Miami, November 19–22, 1929.—*Southern Medical Journal.*

Doctor Bills Financed

We had recently presented before the Chicago Medical Society what is known as the Smith plan for financing medical and hospital accounts. The Smith plan seems to meet with the approval of the attorney for the society as well as the officers. That the scheme is feasible is shown by the experience of the National City Bank of New York.

A year ago the rich National City Bank of New York opened up a department for loans without collateral security, to working folks who needed a hundred or a thousand dollars and needed it badly.

After a year, however, during which the National City Bank has lent over 16 million dollars in such loans, a report was made which showed nearly all of the borrowers met their obligations promptly. The experience of the bank helps support the general conviction that most folks are honest. Most men and women take pride in making their word as good as their bond.

This great bank has helped more than 50,000 New York families by its small-loan policy. It helped a man finance a surgical operation for his son. It provided a waitress with enough money to bring her brother to this country from Germany. It freed many wage earners from the tails of the loan sharks. A third of the loans were for medical and dental service; 15 per cent to pay debts and other loans; 14 per cent went for home equipment, and 8 per cent more for payments on homes; education took 5 per cent. The repayment plan, calling for regular savings accounts deposited from wages, was promptly followed by 97 per cent of the borrowers, and legal action had to be instituted for the recovery of less than one per cent of the total loans.—*Illinois Medical Journal.*

The Spread of Truth

Professions ecome dignified and useful by the services which they render to humanity. Professions differ from other callings in that the element of commercialism is secondary and the ideal of service is uttermost. The medical profession has become a solace to the suffering because the physician, as a man of science, gives his best in the performance of a high duty. Before life and health all other human values are insignificant.

That life is a failure which sheds no sunshine in the path of others. That profession fails to reach the dignity and hope of its founders unless humanity becomes its beneficiary.

Of what good would be the discoveries of all the laboratories if they were put to no purpose? Of what use would be insulin or the antitoxins unless the world learned of their value? Why gatherings of medical men unless it be to acquaint others and to exchange ideas of new health ways discovered, new methods of treatment revealed? The world makes progress only as knowledge and truth become a common heritage.

The good which comes to earnest practitioners from a conference with men of their own profession is but a whisper unless their knowledge can be disseminated. The weekly news service of the State Medical Society of Wisconsin is the vehicle by which the Wisconsin public learns what science can do for the suffering. It is so highly regarded that other states copy its articles.

The good to be accomplished in disseminating knowledge through the channels of the press has a double purpose. It gives the lie to the pretentions of the quack and it affords an enlightened hope to the suffering. But the good can be increased many fold by the active coöperation of every physician. Encourage your daily and local press to use the service. Commend those papers which wholeheartedly spread the truth of the achievements of the medical profession. If the days and years of life are to be prolonged for all humanity, it can only be done by reaching all classes of people with the health message and the service ideals which have become the standard of that profession.

To aid us spread the truth is to help us ennobl the medical profession itself. There is no room for superstitious cures when the knowledge of science is enthroned in the minds of men.—*Wisconsin Medical Journal.*

HOSPITAL NEWS

Hospital Library Facilities

The American Hospital Association is developing the Hospital Library and Service Bureau as one of its major activities. A recent survey made by one of the leading library authorities in Chicago of the material which the Hospital Library has and which is available to the hospital world shows that it is probably the most extensive collection of hospital information that has been assembled any place in the world.

The library contains over 1,600 books on hospital and allied subjects, in addition to 1,500 package libraries covering practically every subject of interest to hospital administrators or to others interested in hospital construction and operation.

It has over $10,000 worth of detailed plans and specifications for hospital buildings, and statistical information relating to hospital subjects that is of very large value.

The Hospital Library and its service bureau is consulted by the leading hospital authorities of the United States and Canada, and the requests from foreign countries are increasing in a large way, particularly since the Atlantic City convention.

The service which the Hospital Library makes available to the field is without charge, and any one interested in hospital subjects can avail themselves of the Hospital Library facilities at any time by calling in person or writing their requests direct to the association.

The library occupies practically the whole of the first floor of the association headquarters at 18 East

Division Street. The office of the director of the library is next to the board of trustees room and conveniently located to all who visit the library. Immediately adjacent are the stack spaces for files of current hospital literature, and in the rear, two stories in height, well lighted, well ventilated, 40x40 feet in dimension, is located the library proper, with its study desks and tables for the convenience of those who are consulting plans or are interested in using the books and other literature for study and research purposes.

The library is in charge of expert librarians who are courteous and helpful in placing the material at the disposal of the visitors.

During the past month an increasing number of hospital people have visited the library, going over the plans for new building projects or reviewing literature on hospital problems.

It is the desire of the association to extend this service as widely as possible and to have all hospital people feel a distinct proprietaryship not only in the material that the library has assembled, but in the service which it is rendering to the hospital field and which it has rendered for the past in such an outstanding manner.

Bibliographies are prepared by the librarians upon any subject of interest to the hospital people. Reading references are supplied and information of this character upon all subjects is promptly furnished upon request.

For eight years past and previous to turning over the library to the American Hospital Association, the American Conference on Hospital Service has been engaged in assembling this wealth of valuable information and in passing it on to the hospital field. This notable accomplishment by the conference is known and appreciated by leading hospital administrators the world over. The association is desirous of bringing this service to the entire hospital field and wants the field to participate in its growth and progress. Hospital people are cordially invited to use the library extensively on their visits to Chicago. They will find a great deal of interest and a cordial welcome. There are a multitude of ways in which the Hospital Library and Service Bureau can be helpful to them.

Arrangements are now being made to secure expert plannings of all hospital departments for hospitals of different size capacities.—*Hospital Management.*

GENERAL NEWS

American College of Surgeons

The American College of Surgeons will hold its nineteenth annual Clinical Congress in Chicago, October 14–18. Headquarters will be at the Stevens Hotel. An intensive program is being planned to make this home-coming event the greatest in the history of the College. The hospital standardization conference will consist of morning and afternoon sessions on Monday to Thursday, inclusive. There will be a series of clinical demonstrations given by George W. Crile, Cleveland; John B. Deaver, Philadelphia; John M. T. Finney, Baltimore; Charles H. Mayo, Rochester, and others.

Monday evening's program will include an address of welcome by the chairman of the Chicago committee on arrangements, Dr. Herman L. Kretschmer, the address of the retiring president, Dr Franklin H. Martin, Chicago; the inaugural address of the new president, Major-General Merrittee W Ireland, Washington, D. C., and the John B. Murphy oration in surgery by Professor D. P. D. Wilkie of Edinburgh. Among the foreign visitors will be Dr. James Heyman of Stockholm, Dr. Thierry de Martel of Paris, Visconte Aguilar of Madrid, and Mr. Herbert Tilley of London.

Tuesday, Wednesday and Thursday evening sessions will consist of scientific papers presented by surgeons from the United States, Canada, and from abroad. The annual convocation of the College will be held on Friday evening. The fellowship address will be delivered by Dr. Glenn Frank, president of the University of Wisconsin. The annual meeting of the governors and fellows will be held Thursday afternoon, followed by a symposia on cancer and bone sarcoma. An all-day session on traumatic surgery will be held on Friday, in which leaders in industry, labor, indemnity organizations and the medical profession will participate.

A special program has been arranged that will be of interest to those whose practice is limited to surgery of the eye, ear, nose and throat. A feature of the Congress will be the showing of surgical films that have been produced under the supervision of, and approved by, the board on medical motion pictures of the College. New developments in color photography will be demonstrated. In addition to the commercial exhibits, there will be scientific exhibits by the departments of the College. A rate of one and one-half times the regular one-way fare has

been granted on railroads of the United States and Canada to those holding convention certificates.

Old Journal Copies

The bound volumes of the WEST VIRGINIA MEDICAL JOURNAL now in the office of the executive secretary date back only to 1920. From 1920 up to the present the JOURNAL files are complete. There are many copies missing, however, between the years of 1906 and 1919, and the JOURNAL is extremely anxious to secure these missing issues in order that the files can be completed and bound.

The issues of the JOURNAL now needed to complete the files for binding purposes are listed as follows:

1906—All but August issue.
1907—January, March, May, and December.
1908—January and May.
1909—Complete.
1910—March, June, and October.
1911—January.
1912—April.
1913—March, April, and May.
1914—January to July, inclusive.
1915—January, May, July, and September.
1916—All but August issue.
1917—April and August.
1918—May, July, and September.
1919—February and March.

Any member of the association having files of old copies of the WEST VIRGINIA MEDICAL JOURNAL can render the association headquarters a most valuable service by furnishing as many of the missing issues listed above as possible. The JOURNAL will be glad to pay one dollar for each one of the missing copies in the above list.

The Growth of Hair

Baldness is a topic of perennial interest, and every physician at some time is importuned to join in the discussion. Indeed, few people are subjected to more irritating unprofessional innuendos than those dermatologic colleagues who are repeatedly being reminded of their inability to cure their own baldness! Clendening[1] pictures the situation gleefully:

Every one but the victim sees the inevitable. Yet nothing seems so difficult as to convince one of them that hope is gone. After consulting a regular dermatologist who tells him there is nothing to do, he begins a frantic round of treatments by barbers, scalp-treatment parlors, drugstore remedies and dandruff cures. He becomes a peerer, from unnatural positions into mirrors. There is more joy over one spear of delicate down than over ninety and dine raccoon coats. Finally, the long struggle ends—at about the age of 40. A nude swath extends from the eyebrows to the external occipital protuberance, the beauty parlors see him no more, and he begins to worry about some dignified way of keeping flies off the sensitive skin covering his calvarium.

Disregarding for the moment the widely accepted conviction that common baldness, in contrast with such disorders as alopecia areata, is an expression of an hereditary condition particularly prominent in the male line of succession, it must be admitted that the formation of hair presents other intriguing problems. Hair results from the growth of a specialized portion of the epidermal structures; and today growth is being studied not only from the standpoint of inherent or hereditary influences that man can not modify fundamentally but also with respect to the less immutable external or exogenous factors, among which the dietary intake is perhaps most conspicuous. There is probably more physiologic sense in the adage, "Eat, drink, and be merry."

The coat of hair consists chemically for the most part of a protein material, keratin, characterized by a relatively large content of the unique sulphur-containing amino-acid cystine. Like several other amino-acids, cystine can not be synthesized *de novo* by the body, but must be supplied performed in the diet. Not all food proteins are equally rich in sulphur and in cystine. It is not unreasonable, therefore, to inquire whether additions of cystine or potential protein sources of it will contribute materially to the rate at which hair grows. In animal husbandry the question applies to such economic problems as the production of wool. In the case of mankind, it becomes the prior concern of the barber.

Experiment has already demonstrated that some of the leguminous proteins are so poor in cystine that they do not suffice to promote growth at a vigorous rate, unless suitable cystine-yielding supplements are supplied along with them in the ration. Lightbody and Lewis,[2] of the University of Michigan Medical School, have raised the inquiry: If, in cases of an inadequate supply of cystine in the diet, the demand for cystine both for the growth of more essential tissues and for the elaboration of the less essential epidermal structure, the hair, can not be met, will the demand for cystine for purposes of growth take precedence over the requirements for the production of hair? This problem, they add,

involves the more general question of the competition between a more essential and a less essential tissue for a unit necessary for each. The high content of the hair in cystine and the possibility of actually measuring the growth of this structure under varying conditions of nutrition make this tissue almost ideal for the study of this problem of competition for an essential chemical component. One is reminded of the analogous competition between normal and malignant cells in the body. The outcome of the Michigan investigations shows that the amount of hair produced, like the general somatic development, was related to the protein (cystine) content of the diet, but under the experimental conditions of this study the demands for protein (and cystine) for the growth of the hair appeared to be secondary in importance to the demands for growth of the body with its more essential tissues. There are indications, too, that not only the amount of hair produced but also the chemical composition of the hair was influenced by the protein (and cystine) content of the diet. The prevention of common baldness is not in sight. The conception of the intimate relationship of chemistry and metabolism to the abundance of the hirsutage evokes a picture that is at the same time humorous and amazing.

1. Clendening, Logan: *The Human Body*. New York, 1928.

2. Lightbody, H. D., and Lewis, H. B.: The Metabolism of Sulphur: XV. The Relation of the Protein and Cystine Content of the Diet to the Growth of the Hair in the White Rat. *J. Biol. Chem.*, 82: 485, May ,1929.

—*J. A. M. A.*, Aug. 3, 1929.

Statistician Wanted

The United States Civil Service Commission announces an open competitive examination for the position of associate medical statistician. Applications for associate medical statistician must be on file with the Civil Service Commission at Washington, D. C., not later than October 23. The examination is to fill a vacancy in the United States Veterans' Bureau, Washington, D. C., and the entrance salary is $3,200 a year.

The duties are to issue instructions to field offices in connection with statistical work; to review statistical data; to assist in evaluating results; to make comparisons between Veterans' Bureau hospitals and dispensaries and civilian hospitals and dispensaries; to study various diseases and conditions among ex-service men, and to endeavor to forecast morbidity and mortality information in connection with various disease

Competitors will not be required to report for examination, but will be rated on their education, training, and experience. Full information may be obtained from the United States Civil Service Commission, Washington, D. C., or from the secretary of the United States Civil Service Board of Examiners at the post office or customhouse in any city.

Committee on Scientific Work

The committee on scientific work of the West Virginia State Medical Association held its first meeting in Parkersburg on the afternoon of September 5, 1929, for the purpose of formulating a tentative program for the 1930 state meeting at White Sulphur Springs. Those in attendance were: Dr. Walter E. Vest of Huntington, president-elect of the state association; Dr. Howard T. Phillips of Wheeling, chairman of the committee; Dr. S. S. Hall of Buckhannon, Dr. Robert King Buford and Dr. G. G. Irwin of Charleston, and Mr. Joe W. Savage, executive secretary of the state association.

The committee decided unanimously that the same general schedule followed out at the Martinsburg meeting last May would be adhered to at the White Sulphur Springs convention. The only departure from this schedule provided that the entire second day of the state meeting should be utilized by the eye, ear, nose and throat sectional meeting. It was understood, however, that this sectional meeting would not interfere with the general session program on the second morning of the convention.

It was also agreed by the committee, through a unanimous vote, to hold the election of officers after adjournment of the scientific program on the last morning of the convention. This action was taken after a letter had been presented and read from Mr. John V. Ray, association attorney, in which Mr. Ray stated that the by-laws did not set the time for the election of officers other than to stipulate that the election should be held on the last morning of the annual meeting.

The committee felt that too little recognition had been given in the past to the members of the association on the general programs. As a consequence, it was agreed that at least three state men would be given places on the general program at the White Sulphur Springs meeting. The committee will hold its second meeting next January in Huntington, at which time the completed program will probably be announced.

Wildcat Insurance Companies

The attention of the West Virginia State Medical Association has been recently called to the Physicians Health and Accident Insurance Company of Dallas, Texas, which company has for some time been soliciting business by mail from West Virginia doctors. It is thought that quite a few members of the association are carrying this insurance, and for this reason an investigation of the company was made by the executive secretary.

The insurance department of the state auditor's office reported that they had recently received a letter from the state insurance commissioner of Texas, setting forth that the Physicians' Health and Accident Insurance Company had assets of only $12,000 on December 31, 1928, and that the company could only pay their members the amounts of benefits provided in their policies by assessments. The insurance department of West Virginia further reported that the company mentioned above was not authorized or admitted to carry on business in this state, and that the company could not be admitted as it was not strong enough.

"It is against the laws of this state," according to the insurance department, "for any person to send an application or a premium to a company not admitted or authorized to do business in the state."

Southern Medical Tour

One of the features of the 1929 meeting of the Southern Medical Association at Miami, Florida, which will be held on November 20–22, inclusive, will be the post-convention tour of Cuba, conducted on the all-expense plan under the direct management of Mr. C. P. Loranz, secretary-manager of the Southern Medical Association. The tour will start from Miami on Saturday morning, November 23, and will last for five days. The cost will be $92.50 per person.

The party making up the tour will arrive in Havana on the afternoon of November 23 and will be quartered at the Sevilla-Biltmore Hotel, which will be the radiating center of the tour. During the trip, the party will be conducted on sightseeing trips to the president's palace, the tropical gardens, Morro castle, Cabanas Fortress, and Matanzas. A tour through the interior of Cuba is also included in the Matanzas trip. The tour will end on November 27, when the party will arrive back at Key West at 4:30 o'clock in the afternoon.

This year's meeting of the Southern Medical Association is of unusual interest to West Virginia doctors because the presidency of the association is held by Dr. T. W. Moore, of Huntington. It is thought that West Virginia will have its largest representation at the Miami meeting, in spite of the distance from this state.

Members of the association in Huntington have arranged for a special pullman to carry a part of the West Virginia delegation to Miami, and it is understood that most of the space in this private car has already been reserved. This special pullman will leave Huntington at 12:45 o'clock P.M. on November 17.

Kansas Contract Troubles

The September issue of the *Journal of the Kansas Medical Society* carries an editorial on the various infractions of the principles of ethics which is of interest to the medical profession throughout the country. A section of the editorial pertaining to contract practice is of particular interest in this state. The editorial itself is too long to be reproduced here, but the text of the editorial, together with the section devoted to contract practice, is given below:

"There has been a great deal of discussion and a great deal of criticism, now and then, of our principles of ethics, both by laymen and by members of the medical profession. Usually in such discussions it is evident that the authors are sorry for us, also that they are ignorant of the text of these rules of conduct and of the basic principles upon which they are formulated. Possibly this accounts in some measure for the frequency of infractions of the principles of ethics and the tolerance with which such infractions are regarded. There seemed reason enough at any rate to let the members of this society judge for themselves if they shall continue to regard themselves as fit subjects for condolence, or if they should be proud of the fact that the association to which they belong had promulgated these principles a century ago—principles that are now being recognized, adopted and elaborated by big and little business all over the country. The text was published in full in the August number of the *Journal* and it is intended now to call attention to some of their most common violations.

"For some time there has been a section in the principles of ethics which reads as follows:

> " 'Sec. 2. It is unprofessional for a physician to dispose of his services under conditions that make it impossible to render adequate service to his patient or which interfere with reasonable

competition among the physicians of a community. To do this is detrimental to the public and to the individual physician, and lowers the dignity of the profession.'

"So far as one can tell, no particular attention has been paid to it, and its very existence seems to have been lost sight of. At any rate there was introduced and passed, at the last annual meeting of the association, a resolution providing that the judicial council of the association be asked to present to the house of delegates, at the annual meeting in 1930, a comprehensive statement for the guidance of the American Medical Association concerning the practice of medicine by corporations, by clinics, by philanthropic organizations, by demonstrations and by similar organizations, and concerning the relationship of physicians thereto.

"Of course it is recognized that the scope of activities to be considered under this resolution is much wider than now provided for by the present section of the principles of ethics, but not of greater economic importance. Violations of that section are now of such common occurrence, and there are so many members of the association now under contract, so many expecting to make connection with some corporation or association, and so many others hoping for an opportunity to make favorable connections, that a little matter of ethics has a poor chance.

"On account of the propaganda put forward by the friends of state medicine, and the increasing number of organizations opposed to state medicine but prepared to capitalize the idea tiself, and the apparent lack of any organized opposition, there seems to be developing in the minds of the general practitioners a great deal of uncertainty as to the future of the practice of medicine in this country, and, whether or not there is real occasion for alarm, many of them seem to think it wise to make sure of a good job while jobs are to be had.

"The establishment of a great hospital plant, efficiently equipped, and with grounds that are beautifully landscaped, is a matter of civic pride to the capital city of Kansas, but it is a matter of considerable financial concern to the hundreds of practitioners throughout the state whose best paying patients are being cared for by this institution, at an expense to them of a mere pittance in the way of hospital fees, fees that are paid not only by the few thousands that receive the service but also by the several hundreds of thousands to whom the hospital is inaccessible on account of distance and its services therefore not available. There is occasion also for further speculation in the recent announcement by one of the oldest fraternal insurance orders in the state that 'a free hospital service is being considered.' There is reason for some further concern in reports of the formation of hospital associations in various parts of the state. These serve but limited numbers, it is true, but, being more accessible to the community, are in more direct competition with the physicians located there.

"Association by members of the society with such institutions as those described is in violation of that section of the principles of ethics quoted above, but so also is a similar relation with railroad and other industrial hospital associations. Perhaps in its deliberations suggested by the resolution recently adopted the judicial council will determine how a distinction may be made between ethical and unethical contract practice.

"There are still other very common infractions of the principles of ethics which in some instances meet with the severest rebuke and in other instances are ignored."

American Red Cross

The late war furnished to many medical men the opportunity of seeing in one week more wounds, fractures, abrasions and contusions, demanding up-to-the-minute treatment with makeshift appliances, than the most assiduous ambulance-riding interne, attached to an emergency ambulance in a crowded city, happened upon in a year. Here, too, were concentrated on a great scale the problems that fall within the scope of public health work—sanitation, disease prevention, and immunization. Many medical men profited personally by their contact with emergencies of this sort and kind in a way that added considerably to their professional stature. Necessity brought into play many aids to medicine and surgery which would otherwise have been dormant until called into play by some major disaster or catastrophe where numerically the cases approximated those of war time.

Perhaps because of this striking advance in procedure on a large scale, the results obtained in the major disasters during the past few years have been so outstandingly characterized by successful handling. The national organization which has devoted much effort to developing to an exact science the art of caring for the sick and wounded in major calamities is, as it was at the time of the world war,

the Red Cross. Chartered by Congress especially to "carry on a system of national and international relief in time of peace and to apply the same in mitigating the sufferings caused by pestilence, famine, fire, floods, and other national calamities, and to devise and carry on measures for preventing the same," it is a semi-official agency. Where local chapters are prepared when disaster strikes, the leadership in relief work is generally assumed by them. Each community therefore begins its own relief work through the medium of the local chapter. The national organization, as such, participates or assists in this work only when the community is not able to cope with the problem, or when assistance is requested.

There is always, in disaster, an emergency period where immediate needs, aside from rescue work, are food, shelter, clothing, and medical and nursing care. Rebuilding homes and other rehabilitation problems are matters for later consideration, but life and health must be sustained throughout the critical period. Those seriously ill and injured are taken to hospitals in the community or in neighboring cities. First-aid dressing stations and dispensaries in various parts of the disaster area, expansion of existing hospitals or the organization of emergency hospitals are frequently necessary.

Many medical and public health problems are not limited to the emergency period alone, but marked increase in illness among refugees may occur. Pneumonia and other respiratory infections following exposure are not uncommon. Typhoid fever caused by contaminated water, scarlet fever, measles and smallpox may occur in epidemic form. In tropical climates dysentery and malaria may increase.

Special maternity service must be provided where the disaster involves a large number of people.

There are two major medical problems in nearly every large disaster, *viz.*, medical and hospital care of the sick and injured, and the health supervision of the disaster area. From an administrative point of view these are distinctly separate problems and must be so regarded in organizing the relief work. The first is the responsibility of the local physicians; the second is the duty of the constituted health authorities.

The Red Cross does not assume the responsibility for the care of the sick and injured; neither does it undertake to direct the health activities in the area. These are clearly the function and duty of local physicians and health agencies. If, however, a community is without medical service, as happens occasionally, or if there are not enough physicians to handle the problem, the relief agency must naturally share in this responsibility; but there is no attempt on the part of the Red Cross to supersede local physicians or to take over the work which rightfully belongs to them. Every effort is made to maintain and restore a normal relationship between physicians and patients.

The Red Cross can render the best medical service in disasters, it is believed, not by attempting to sponsor these duties but by providing for the local medical profession and health authorities the supplies, facilities and personnel which they lack and need for the emergency.

The Red Cross Medical Service makes every effort to work in the closest coöperation with the local medical profession. The need for dressing stations, dispensaries, medical service at refugee centers, expansion of existing hospitals, establishment of emergency hospitals, providing or securing supplies and equipment or the employment of additional medical and nursing personnel, is determined with their advice and counsel. It is fully recognized that the services of local physicians form an integral part of the relief and rehabilitation work and that their fullest coöperation is necessary to restore the refugees to normal living conditions.

In disasters covering a large territory it is frequently necessary to introduce additional medical and public health personnel to help survey the area and determine the critical needs. Representatives of the United States Public Health Service, the Medical Service of the United States Army, and physicians with previous disaster experience frequently volunteer their services. It should be clearly understood, however, that where this is necessary they are used primarily for administrative purposes and not for treating the sick and injured. The latter is left to local physicians wherever possible.

Where it is necessary to employ physicians for service at dressing stations, dispensaries, *et cetera*, preference is always given to local physicians.

Disaster relief services, as well as other peace-time services of the Red Cross, are possible because of the nation-wide character of its membership. Invitation to enroll in this organization is extended, for the coming year, between November 11 and 28.

Diabetic Coma

The department of public health of Massachusetts is conducting a campaign for the prevention of death from diabetic coma. The following abstracts were

gleaned from a pamphlet that is being sent out by the Massachusetts department of health to the doctors in that state:

A diabetic should never omit his insulin unless his urine is sugar-free. He must never forget that when he stops eating food he begins eating himself—his own body—and so still requires insulin and often very much more insulin than before.

If he has an infection as a cause of his loss of appetite, he should know that an infection lowers the value of insulin and thus makes more insulin than usual a necessity.

Coma (and by diabetic coma is meant acid poisoning) is a sly fox and will steal away a diabetic before he or his friends suspect it. Within a few hours mild symptoms, such as indigestion, lack of appetite, and pain in the abdomen, may be followed by difficult breathing, drowsiness, and unconsciousness. The only safe way, therefore, for the diabetic to protect himself against coma, is to keep well and sugar-free all the time.

Whenever he feels ill and sick he should (1) call his doctor, (2) go to bed, (3) take a hot drink every hour, (4) take an enema, (5) keep warm, and (6) get a nurse or some one to care for him. Another good rule is to have boiled water ready for the doctor when he arrives in case he wishes to use it.

Minor differences in the treatment of coma exist, but all agree that promptness in diagnosis is everything and next to it comes energetic treatment at the earliest possible moment. If coma exists the doctor must give up everything else until the patient comes out of it. (1) Insulin is usually required every half-hour in 10- to 40-unit doses or more, varying with the severity of the symptoms, and if it is given intravenously it should always be given subcutaneously at the same time. (2) Dehydration of the patient must be overcome by the subcutaneous injection of normal salt solution, and one can not rely on fluids given by mouth or rectum. (3) The heart is almost always weak and needs stimulation with caffein sodio-benzoate, 7½ grains, and this may be given every hour, if need be, for three or four doses. On account of the weakness of the heart, salt solution must be injected very slowly if given intravenously. (4) With children and usually with adults the stomach is distended and, unless evacuated, prevents the subsequent retention of liquids such as water, gruels, ginger ale, or the juice of 2 or 3 oranges—in other words, carbohydrate amounting to 50 grams. Therefore, gently wash out the stomach.

CONTEMPORARY COMMENT

More Diploma Mills

Activities of the various "diploma mills" operating at intervals throughout the middle west invariably make interesting reading matter. The schemes and machinations of the ingenious crooks who operate these institutions are fascinating in themselves. The public seldom hears of a "diploma mill" until it is exposed and chased out of business, and the fact of exposure is properly considered as wholesome literature for the medical profession. When any "diploma mill" is wiped out of existence, both the profession and the public at large are eager for all known particulars.

The "diploma mill" situation in Illinois and Missouri has caused recent rumblings in the lay press and the authorities have again been active. An interesting account of a typical arrest made last August 3 in Kansas City is related in the September issue of the *Journal of the Missouri State Medical Association*. The account concerns the exposure of one Dr. Ray B. Horton through the medium of a cleverly laid police trap. The Missouri journal says:

" 'Diploma mill' scandals of several years ago have turned up in the courts again both in Illinois and Missouri, where the latest swath of the aftermath was the arrest of Dr. Ray B. Horton in Kansas City August 3 on charges of extortion. Dr. Horton, whose license to practice in Missouri was revoked for earlier diploma mill activities, was trapped in his office, opened recently, by investigators for the county prosecutor just after Dr. C. A. Beard, Kansas City, Mo., gave him $1,000 in marked bills.

"Dr. Beard had complained to Prosecutor James R. Page that an attempt was being made to blackmail him. He is a graduate of the Kansas City College of Medicine and Surgery, later involved in the 'diploma mill,' and told Page that Dr. Horton had offered for $1,000 to keep his name from a list of the school's graduates, which Horton said was to be published in a 'diploma mill' news article.

"Four investigators followed Dr. Beard to Horton's office; one remained on Grand Avenue below the office windows. Dr. Beard entered alone. He reported that he handed Dr. Horton the marked money in an envelope. Two investigators burst in. Dr. Horton fought them off long enough to toss the envelope out a window, but it was retrieved by the investigator who had remained below. It re-

quired the combined efforts of three investigators to subdue Dr. Horton.

"In consequence of action taken three days later by Dr. James Stewart, secretary of the Missouri State Board of Health, Dr. Horton may lose his license to practice medicine in the state of Kansas. Dr. Stewart formally notified Dr. A. S. Ross, secretary of the Kansas State Board of Medical Registration and Examination, that Dr. Horton's license to practice medicine in Missouri was revoked in May, 1927. He pointed out that the Kansas license had been granted on a reciprocity basis to Dr. Horton as the holder of a Missouri license.

"New indictments returned August 1 in Chicago, where several men in various parts of the country have been indicted as members of a license-peddling ring, named W. H. H. Miller, former director of the Illinois Department of Education and Registration, and L. Mitchell Blaine, a former employee of the department. Miller was deposed a few years ago after conviction of misdealing in licenses and examination papers.

"Investigators for the state's attorney have declared that more than 1,000 fake medical and dental licenses had been sold by this organization for about $2,000 each, and that diplomas of highly reputable medical schools had brought prices even higher. The ring went to the extent of obtaining photostat copies of original licenses and diplomas and making plates for the printing of forgeries.

"Chief Investigator Patrick Roche arrested a Springfield printer, who, he said, admitted that forgeries were made of diplomas of Rush Medical College, Northwestern University Medical School, and the University of Wisconsin Medical School, as well as interne certificates from Cook County Hospital and the licenses and seal of the state of Illinois. Information on the extensive machinery for making forgeries was obtained by Roche from one of the seven men indicted earlier in the summer, Albert Carl Barron, who stated that he and the printer had thrown counterfeit plates into the drainage canal and Lake Michigan. The plates for forging the seals of Northwestern University and the University of Chicago medical schools were recovered from Lake Michigan by a professional diver retained by the state's attorney."

Scientific Presentations

The question of attendance at medical meetings has always been, and perhaps will always be, a subject of considerable concern. The question invariably deals with the presentation of scientific papers, the lack or abundance of social facilities and functions, and all of the things that go to make up a county, state or national convention. Without espousing the cause of any particular school of thought, the JOURNAL calls attention, merely as a matter of interest, to the following editorial by Dr. E. L. Tuohy that appeared in the September issue of *Minnesota Medicine*:

"The writer gets much information and considerable stimulation out of the pages of the American Medical Association bulletin. There one reads medical oratory at its best, and, even if denied the opportunity of attendance at some of the various assemblies held under the auspices of the mother house in Chicago, the echoes rise from the pages, of dangers sensed, attacks diverted, and movements won. Those guiding this standardizing machinery deserve our loyal support rather than cynical or lethargic comment. Nevertheless, it can do them no harm to prick a few of their alarm bubbles and possibly direct their zeal to more productive fields.

"Recent attendants at the American Medical Association meeting came back none too impressed with the depth, scope, manner of presentation, or novelty of many of the papers heard. Of course, there were the usual noteworthy exceptions. This bold statement is made because of the alarms and fears expressed in the bulletin and elsewhere that special societies and (particularly) hospital staff meetings are absorbing the doctors' interests and that it is in their closer circles that the best educational material is being presented.

"The fear is unfounded: these societies are the proving ground for developing men. The real trouble lies in the formal machinery—political and otherwise—that absorbs so much of the time and vitality of the American Medical Association and our state societies. Those who are fearful should subordinate a lot of the pomp and ceremony, and not a little plain bunk, in the big meetings; the small ones are here to stay. They are developing and displaying methods as direct as they are helpful. They come direct to the vital issues of the day and are first to sense them. Little time is lost in official greetings and triumphal entries. Romans like Titus had an arch for their reception, not so much to tickle their vanity as to 'pep' up their followers and successors to return to the provinces not only to perpetuate the system but to garner the provincial bacon."

Medical Frauds

Elsewhere in this issue of the JOURNAL there appears, with some comment, an article on "diploma mills" from the *Journal of the Missouri State Medical Association.* Apparently the quackery troubles from the middle west have spread into Ohio, where they seem to have gained considerable foothold. The *Ohio Medical Journal*, in a recent article on "Medical Frauds," contributes the following:

"Exposés of medical fakery in some form or other in several Ohio cities within recent months has led newspapers of these cities to call for a clean-up and a campaign against those who have been deceiving the public with their quackery and worthless healing schemes.

"One Ohio daily recently stated in its editorial columns: 'We declare for a housecleaning. If our present city laws will not permit it, then make new laws. If our Ohio laws permit the faker to take money from desperately ill folk, then it is high time that something is done about that as well.'

"The present Ohio laws governing the practice of medicine are stringent and adequate in most cases to protect the public against the quack and faker. However, honest, competent and fearless law enforcement officers in counties and municipalities are necessary to make the medical practice statutes 100 per cent efficient.

"Attorney General Bettman, in a recent address before the Ohio Bar Association in annual meeting, deplored the tendency to seek to centralize all authority for enforcement of the law in the attorney general's office and vigorously urged that local law enforcement officers be zealous to see that the time-honored theory of home-rule be applied to that phase of the government, except when local governments are prostrated or unable to cope with situations.

"The game of 'passing the buck' is often engaged in by local enforcement officers. Too often the job of prosecuting medical frauds and fakers throughout the state is left entirely to the state medical board with its limited finances and personnel. The first responsibility lies 'at home' with the regularly constituted law enforcement officials and courts.

"It also is to be hoped that those of the laity who are now demanding a clean-up will utter as vigorous protests the next time groups wholly incompetent to treat the sick appear before the Ohio legislature and demand special privileges for themselves through revision of the medical practice laws."

National Radium Emanator

The National Radium Emanator, marketed by the National Radium Products Co., and the Saubermann Radium Emanation Activator, marketed by Radium, Limited, are appliances for impregnating drinking water with radon (radium emanation) in dosages ranging from 50,000 to 200,000 maché units in the case of the former, and 10,000 to 100,000 maché units in the case of the latter. The acceptance of both these products expiring with the close of 1928, the firms were asked to submit evidence in favor of their continued inclusion in New and Non-official Remedies. The National Radium Products Co. submitted an advertising circular which was in effect an indirect advertisement to the public and which made claims far in excess of those previously permitted by the Council. Radium, Limited, failed to respond to requests for the current advertising. In consideration of the claims made for the first apparatus and of the failure of the second firm to submit the present advertising, and because no further acceptable evidence has become available, the Council on Pharmacy and Chemistry voted to omit these products from New and Non-official Remedies and not to accept further apparatus for the activation of drinking water until convincing evidence for the therapeutic value of the internal use of radon becomes available.—*Journal A. M. A.*, April 6, 1929, p. 1181.

Viking Cod Liver Oil

Viking Palatable Cod Liver Oil, marketed by the Viking Health Products Co., is cod liver oil containing 0.2 per cent of benzaldehyde. It was accepted for inclusion in New and Non-official Remedies in 1927. In 1928 an advertisement for the product appeared in the Chicago *Daily News* which was objectionable in that it made unwarranted claims for the product. The rules of the Council on Pharmacy and Chemistry provide that the acceptance of an article that is advertised to the public with unwarranted claims shall be summarily rescinded. The Council voted to omit Viking Palatable Cod Liver Oil from New and Non-official Remedies because it is advertised to the public with claims that are objectionable and unwarranted.—*Journal A. M. A.*, May 4, 1929, p. 1521.

The West Virginia Medical Journal

Directed and Edited by the Committee on Publication

[The Committee on Publication is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible]

JAMES R. BLOSS, *Editor-in-Chief* - - - - - - - - Huntington

ASSOCIATE EDITORS:

WALTER E. VEST, Huntington — HARRY M. HALL, Wheeling — J. HOWARD ANDERSON, Marytown — C. A. RAY, Charleston

MR. JOE W. SAVAGE, *Secretary-Business Manager*, Charleston

Entered as Second Class Matter, January 1, 1926, at the Postoffice at Charleston, West Virginia

Vol. XXV — NOVEMBER, 1929 — No. 11

SYMPOSIUM ON TRAUMATIC SURGERY

THE GENERAL FIELD OF TRAUMATIC SURGERY *

By WILLIAM O'NEILL SHERMAN, M.D.

Pittsburgh, Pa.

INTRODUCTION

Trauma, directly or indirectly, involves every organ in the body and, in its various phases, is the most common condition that the practitioner is called upon to treat. The scientific treatment of trauma has been sadly neglected, due, chiefly, to lack of interest and the great advances made in other branches of surgery. As a result of this disinterest and general apathy that exists, the end functional results are anything but a credit to the medical profession.

The National Safety Council reports 95,000 deaths and 10,000,000 accidents last year. During the nineteen months the American troops were on the foreign line, they lost 50,000 by death and 200,000 were injured. In the same period of time, in peaceful America, 126,000 were killed and the injured ran into the millions. It is estimated that 296,000,000 days were lost through accidents, and the loss in wages totaled $827,000,000; the economic loss will reach $5,000,000,000.

At the onset of the World War, the medical profession was just as unprepared to meet the great demands made on it as were the governments from a military standpoint. Necessity is frequently the "mother of invention," and as a result of the tremendous wealth of clinical material created by the war, much was learned that is now applicable in civil surgery. Trauma is trauma, whether it be the result of war or peace, and the principles of treatment remain the same. Farming is quite a hazardous occupation, due chiefly to the use of machinery, so it must not be assumed that trauma is confined chiefly to the industrial centers, as it is just as frequently found in the rural districts. Efforts to create pseudo-specialists, such as "military surgeons," "industrial surgeons," "traumatic surgeons," etc., should be discouraged. The subject in its entirety is too large to discuss in full during the brief time allotted, so that the subject matter of this paper will be confined chiefly to principles, omitting those on trauma of joints, nerves, tendons, blood vessels, etc.

The statistics, as revealed by compensation boards, accident insurance companies, industrial corporations, etc., are not very complimentary in so far as end functional results are concerned. The compensation boards of New York and Ohio report 33 per cent of the wounds coming under their observation as being infected. Practically the same ratio of infection extends throughout the country. It is due to delay on the part of the injured to report promptly for attention, or to faulty methods of treatment.

This situation is fully realized by the American

* Read before the Surgical Section of the West Virginia State Medical Association at Martinsburg, W. Va., on May 22, 1929, by J. Huber Wagner, M.D., of Pittsburgh, Pa.

College of Surgeons. They have an active committee on traumatic surgery, and are about to launch an extensive and aggressive campaign of education in the hope that more interest in trauma and better treatment in hospitals will result. It is entirely within the power of the profession to eliminate most of the infection so commonly found, and as the laity becomes educated to this fact better and more scientific treatment will be demanded. It is quite obvious that recent graduates of our medical colleges are familiar with the various rare, obscure tumors and diseases which they seldom encounter, but are very deficient in their knowledge as to the treatment of trauma, fractures, etc., notwithstanding the fact that more than seventeen million traumas occur annually in the United States. It would seem advisable, therefore, that more instruction on this subject be given and less on research and questionable laboratory methods, so that the medical students would be better fitted to cope with conditions that they are called upon to meet in actual practice.

TREATMENT OF WOUNDS

The literature on this subject is so voluminous that it is quite impossible to exhaust it. At some time or other, almost every known chemical compound has been used or advocated. Carrel and Tuffier found them to be of no value in the treatment of wounds, or in the treatment of infection when once established. Notwithstanding the complete failure of tincture of iodine (used ineffectually in at least ten million wounds during the war), there are those who persist in its use with the blind faith of their forefathers in its antiseptic value. We of the profession have led the public to rely on iodine as an antiseptic of great merit, when, in fact, it is absolutely worthless in the treatment of wounds. Blind faith in all antiseptics (*i.e.*, bichloride, the carbolic group, tincture of iodine, etc.) as against scrupulous asepsis, debridement, sound surgical judgment, etc., has caused much unnecessary infection.

Careful asepsis, conservative or rational debridement, exercise of sound surgical judgment, supplemented by the use of a 0.5 sodium hypochlorite and hypertonic saline solution in cobmination, have resulted in a reduction of infection to one in six hundred cases. This is practically eliminating infection from wounds.

In two dispensaries, where 25,029 wounds have been treated by the above method, but three infections have occurred. Not only in the surgical dispensaries, where 50,000 injured are treated annually, but in our base hospitals with a service of 200 beds, infection has, to all intents and purposes, been eliminated. The knowledge gained from the World War has made it possible to prevent infection in cases coming under our control.

A research commission, composed of scientists and clinicians acting as a clearing house on this subject, could do much to clarify the general chaos and confusion existing relative to the merits of various antiseptics. Certain commercial chemists and ultra-enthusiasts have "broadcasted" to the profession and public the merits of their products, only to have time and use of same prove the utter worthlessness of the many hundreds of antiseptics advocated. But one, *i.e.*, sodium hypochlorite in aqueous state, of low alkalinity, has withstood the test and claims made for it; but, unless it is used as advocated by Carrel, it is of little or no value. No antiseptic can possibly compensate for errors in surgical judgment or failures in asepsis, but when used in combination with sound surgical judgment and known and proven principles of asepsis, sodium hypochlorite is of great value and of itself is as near a specific, in so far as treatment of wounds and wound infection is concerned, as is available at present. The failure of sodium hypochlorite to prevent infection is not due to the hypochlorite itself but to the method of its application.

TREATMENT OF BURNS

The great majority of the 76,622 burns on our service during the past twelve years have been treated by the use of paraffin-wax, as per the technique of Barthé de Sandfort. The results secured in this series, in comparison with results of the open methods (*i.e.*, heat, light, etc.), are so superior that comparison is odious. The great relief from pain and rapid convalescence with minimum cicatrix justifies the use of this method and recommends it as the treatment of choice at this time.

The objection to the use of wax, in that it interferes with drainage, is chiefly academic and not a matter of fact. Many who object to its use are inexperienced in the technique and have arrived at conclusions based upon insufficient observation. There is no treatment of burns known which will eliminate toxemia and absorption of toxins and prevent, in its entirety, scar-tissue formation. In extensive third- and fourth-degree burns, skin grafting following chemical sterilization must be done, regardless of the method used.

The tannic acid method, as advocated by Davidson, undoubtedly has merit, but does not prevent the absorption of toxins. Before a true comparison

of the two methods can be made, further control experiments and experience are necessary. The tannic acid method is only applicable in hospital cases, while the paraffin-wax treatment can be used in ambulatory cases.

The technique, as recommended in the wax treatment, should be carefully followed, and the paraffin atomizer and special absorbent cotton (Johnson and Johnson) are most important and should be included in one's armamentarium.

TREATMENT OF SIMPLE FRACTURES

Notwithstanding the great surgical strides made in the treatment and diagnosis of lesions of the stomach, intestine, gallbladder, goiter, etc., the treatment of fractures, operative and non-operative, has made equal progress during the past twenty-five years. The great difference of opinion relative to treatment has added to the general misunderstanding existing on this subject. There are certain methods, splints, operative technique, etc., which should be accepted as standard practice until such time when better methods are evolved. Absolute or rigid standardization is undesirable and would retard progress.

The vast majority of fractures are treated by the general practitioner, and it is to him that progressive and modern methods should be directed. It is refreshing to note that the first well-organized course in the treatment of fractures was given the week preceding the meeting of the American College of Surgeons at the Massachusetts General Hospital in Boston. So great was the interest in this subject that the quota of 125 applicants was quickly filled, and many applications for the course were rejected. Fracture services should be established in large hospitals throughout the country, and the operative and non-operative treatments, with their respective limitations, should be taught to graduates and undergraduates. Further discussions and symposiums on this subject are of little constructive value as compared with visits to well-established clinics where modern methods are employed. During the past twenty-five years the treatment of fractures has been revolutionized, but the profession has been very slow to accept the advances. Much of the opposition to the adoption of various splints, operations, etc., is being overcome, and during the next five to ten years we can reasonably expect to see the treatment of fractures put on the high scientific basis it deserves.

The constructive suggestions of the fracture committee of the American College of Surgeons have greatly stimulated interest in this subject, so that it is only reasonable to expect a great improvement in the end functional results. The fracture problem is not one that concerns only we of America. It is a world-wide problem; every fracture should be considered just as much an emergency case as an acute appendix — immediate reduction, skiagram, and proper spltinting should be done, with early mobilization. Operation should only be considered where reasonable reduction can not be secured and by those who have had training in operative technique and in hospitals where proper armamentarium is available.

The disastrous and generally unsatisfactory results following operative treatment, when steel plates and screws have been used, is due to faulty technique and not to the plates and screws. Surgeons have stubbornly refused to accept the meticulous technique so necessary, with the result that many cases become infected with osteomyelitis, etc., complicating the case and resulting in prolonged hospitalization and impaired function. Operations on fractures should not be attempted except in the very best aseptic surroundings. The technique as used in abdominal sections is not sufficiently refined for operation of fractures or joints.

The general practitioner and surgeon should realize that, if operative treatment is indicated, it should be done early—within the first ten days or two weeks—and that he should have a thorough knowledge of the application of Thomas, Jones, Cabot, molded plaster, etc., types of splints, with their limitations as well as uses. The treatment of fractures with great overlapping and malposition, for months, and then referring same for operative treatment, is indefensible and can not be too strongly condemned. Many malpractice suits are based upon this most pernicious practice.

TREATMENT OF COMPOUND FRACTURES

The general principles as outlined in the treatment of wounds is applicable in wounds of compound fractures. If a reasonable and satisfactory reduction of the fracture can be secured, no further procedure, other than fixation of the fracture in proper splints, is indicated.

If the fracture can not be reduced, then the wound should be enlarged. In a spiral or oblique fracture, transfixion tap screws should be used in the reduction and a steel plate and screws of proper size in transverse fractures, but encircling bands and wires are contraindicated; extensively comminuted fractures should not be operated upon, but should be treated by skin or skeletal traction.

This method of attack is chiefly indicated in ex-

tensive wounds of soft parts due to trauma and compounding forces from without. Where wounds are mere punctures from within, or of small character, proper treatment of the wound and splinting of the fracture is all that is indicated. If bony alignment is unsatisfactory, operative treatment as in simple fractures can be done at the end of eight to ten days. In large wounds compounded from without, following debridement and plating, the wound is left wide open and Carrel technique instituted at once. Infection does not take place unless there is trauma with complicating thrombosis in deep structures. Plates and screws are removed within four to five weeks after bony fixation takes place, and the wound allowed to cicatrize, frequently followed by plastic skin operations.

This technique is not to be found in textbooks and is generally thought to be quite unorthodox; nevertheless, in a large series of cases, during the past twelve years, it has been 98 per cent successful so far as infection and bony union are concerned. Its success is dependent upon proper debridement, fixation of fracture, chemical sterilization of the wounds, and immobilization with proper and adequate splinting.

PLASTIC RECONSTRUCTION

The many deformities and cicatrices resulting from the World War stimulated interest in plastic surgery. The so-called Italian technique, as practiced in the fifteenth century, has been, to a great extent, a lost surgical art; but the remarkable reconstruction work during the war by Morestine, Gilles, Blair, Ivy, and others, has added greatly to our knowledge of this subject, as well as rehabilitating many unfortunates who were doomed to hideous deformities and cicatrices. The general surgeon has neglected and shown little interest in this most interesting work, and, in general, the technique and principles as advocated by the abovementioned surgeons have not been utilized except by those specializing in this branch of surgery.

Much can be done by proper surgical measures to minimize or eliminate deformities of the soft parts, and attempts to this end should be made. Many of the extreme contractures following burns could be prevented by proper initial treatment, thus averting unnecessary secondary plastic operations. The use of pedicle tubulus (Italian) has made possible many excellent cosmetic results as well as relieving contracting cicatrices which greatly interfere with function.

It should be remembered that extensive cicatrices are prone to become malignant ((epitheliomata) in later years, and all efforts should be made to reduce cicatrical tissue to a minimum.

STIMULATION OF WOUND REPAIR AND SKIN GRAFTS

Carrel and Tuffier employed, unsuccessfully, almost every known chemical as well as heliotherapy in an attempt to activate or stimulate wound repair. Kreuscher, Strauss and Pennington, of Chicago, in a large series of cases of osteomyelitis, proved beyond a doubt the fact that an intense chemical hyperemia can be produced by aluminum potassium nitrate as incorporated in a sterilized poultice of rolled oats. Following chemical sterilization of wounds, aluminum potassium nitrate can be used to great advantage to stimulate wound repair and hasten cicatrization. It is of great value and a distinct contribution, and of far greater value than Bier's hyperemia in the treatment of selected cases of osteomyelitis, scar-tissue ulcers, varicose ulcers, furunculosis, carbuncles, induration of soft parts from infection, compound fractures with extensive loss of soft parts where replacement of tissue is needed, and in stimulating growth of skin grafts. It is used in but few clinics and is little known, despite its usefulness in certain cases where, heretofore, therapeutic measures have been of little value. A thorough understanding as to indications and contraindications of its use is necessary.

During the past ten years, we have treated more than three thousand cases with most gratifying results. It has a definite therapeutic value, and, while not a specific or "cure-all," this treatment should have a distinct place in all hospitals and in practice where its use is indicated.

GUILLOTINE OR CHOP AMPUTATION

This operation is frequently resorted to as a life- and limb-saving measure. Because of shock and trauma to soft parts, as well as in cases of gas gangrene, a quick chop, leaving all flaps wide open, followed by chemical sterilization, has reduced the mortality tremendously. It is extremely rare to have a fatality from an amputation. The chief contributing factor in the reduced mortality is the great saving of operative time. The operation can be done in three to five minutes with ethylene or nitrous oxide, followed by wound sterilization with secondary suture supplemented by plastic measures where indicated. In cases of gas gangrene, and in sepsis with extensive thrombosis and subcutaneous cellulitis (not lymphangitis), procrastination is too frequently the cause of death. In such cases, the chop

supplemented by free and ample subcutaneous incisions should be followed at once by chemical sterilization.

Frequently, only very bold and radical measures will avert death. The great advantages of this operation have been demonstrated in the World War, but it is used too infrequently in civil practice.

SKIN GRAFTING

Previously to the use of the Carrel technique of chemical wound sterilization in our practice, approximately fifty per cent of skin grafts were failures. These were due to the attempt to graft on wounds which were infected but which, to the naked eye, looked perfectly healthy. Following sterilization of wounds by a 0.5 per cent sodium hypochlorite and hypertonic saline, the technique of skin grafting has been perfected so that more than ninety-five per cent of the grafts in a large series of cases during the past twelve years have been successful. It is very rare to have failures where the bacteriological condition of the wound is noted by culture and smear. No wound should be subjected to skin grafting without a bacteriological study, nor should grafting be done in the presence of streptococcus.

Briefly, the technique used is as follows: Chemical sterilization of wounds, confirmed by smear and culture; immediately following placement of grafts, a basket-weave dressing of strips of cellosilk (a transparent celluloid material) is used to splint the grafts; the Carrel tubes are placed in a large, loose, fluff dressing so as to keep the entire dressing well saturated with the 0.5 per cent sodium hypochlorite and hypertonic NaCl instilled every two hours. Dressings, employing the same technique, are changed at the end of five to seven days until firm union of grafts to host has taken place. Following this, if stimulation of skin grafts is indicated, aluminum potassium nitrate can be used to great advantage to shorten convalescence.

POST-CONCUSSION OR TRAUMATIC HEADACHES

Previous to Penfield's contribution, the so-called trephine syndrome (*i.e.*, headache, vertigo, and ringing in the ears, was usually a chronic or incurable condition. Many of these cases were diagnosed as "neurotics" and all treatment was of little benefit in so far as relief of the symptoms was concerned.

Penfield reported seven consecutive cases in which patients were either greatly benefited or cured. The technique consists of withdrawing, by lumbar puncture, 5 c.c. of cerebrospinal fluid at a time, slowly, with the injection of an equivalent amount of air. From 65 to 125 c.c. of fluid have been removed and its equivalent of air injected. The patient should be placed in position with the head elevated, and Penfield's technique carefully followed. After the withdrawal of fluid and the injection of air, a skiagram of the skull is made, showing the air in the ventricles and localized in the area where the headache is most severe.

Patients are usually prostrated following treatment and suffer intense headaches for three days. Within ten to twelve days, subjective symptoms are greatly relieved and within three to four weeks the patients are well enough to return to work.

Our experience has been confined strictly to post-concussion headaches, unacompanied by fracture of vault or base. Since February, 1928, twenty consecutive cases have been treated in our clinic and all have responded to the treatment and sufficiently benefited to return to work, or are entirely cured. The results secured to date have been most dramatic and encouraging, notwithstanding this is but a preliminary report, and justifies the continuance of the method.

With the seven cases reported by Penfield, a personal report of eigth others by Dr. Paul Sieber, and twenty of our own, make thirty-five cases so far which have been treated with but one failure.

SYMPOSIUM ON TRAUMATIC SURGERY

NERVE AND MUSCLE INJURY IN RELATION TO FRACTURES *

By ALBERT G. RUTHERFORD, M.D., F.A.C.S.
Welch Hospital Number One
Welch, W. Va.

There is a tendency among surgeons, when confronted with a fracture, to think largely or entirely in terms of the broken bone. The possible injury to nerve and muscle, so likely to occur even in the so-called "simple" fractures, receives scant attention; the "soft parts" are regarded as mere coverings which are to be respected or abolished in accordance with the needs of the underlying bone. Seldom does the possible disability which permanent injury to nerve and muscle may inflict on the patient, or the desirability of obtaining good cosmetic or functional results in the healing of these non-osseous structures, assume the importance which is their due. Textbooks which devote many pages to the details of caring for the widest variety of broken bones, often

* Read before the Surgical Section of the West Virginia State Medical Association at Martinsburg, W. Va., on May 22, 1929.

whole chapters for each different "break," are content to sum up the items of interest in regard to injured soft parts in a few paragraphs in the general introduction. An exception to this is the treatise of Roberts and Kelly, who wrote, many years ago: "The coincident damage to muscles, tendons and fascial sheaths in all fractures is often neglected by surgeons. It may be of as much importance as the lesion of the bone itself."

A search of the literature reveals that complications involving the peripheral nerves have seemed to offer writers on fracture more food for thought than those in which muscular lesions were of more importance. Fracture of the skull with its attendant neurological disturbances has produced an abundant literature, but of this I shall not attempt to speak, for by doing so I would step outside the limit I have imposed upon myself, within which are only those injuries connected with fractures of the bones of limbs and extremities, with, occasionally, fracture of the clavicle. Lewis and Miller, of Chicago, in reporting on 253 cases of nerve injury associated with fractures, mention that 210 were of the humerus and 14 of radius and ulna together; of radius alone, 9, and of ulna alone, 1. This is probably in accord with the greater frequency of these fractures, and should not be taken to indicate that the fracturing of the bones of the arm is any more likely to involve nerve lesions than others. Injury to the musculospiral nerve took place in 136 cases, in 50 of which it was the middle third of the humerus which was fractured. Injury to the lower third of the humerus involve dthe ulnar nerve in 55 cases. In the seven cases of brachial plexus injuries, the fracture was in the clavicle six times and in the upper third of the humerus once. My experience leads me to believe that this proportion would hold fairly well in any practice dealing largely with traumatic surgery.

Nerve lesions in connection with fractures are customarily spoken of as *primary* and *secondary*. By a primary nerve lesion we indicate one which was made manifest at the time of the original fracture, or very shortly after it; a secondary nerve lesion is one that was not in evidence until some time after the receipt of the injury to the bone. It is highly probable that many nerve injuries are present from the start, but because the surgeon's attention is absorbed by the problems presented by the damage to the bone, the condition of the nerve is not observed until some time afterward. When paralysis "sets in" it often merely means that neither patient nor physician realized the extent of the damage which had occurred, and it was not until dressings were changed or removed that the gravity of the nerve lesion was made manifest.

It has been the experience of Dickson and Diveley, of Kansas City, who recently presented a most interesting study of peripheral nerve lesions accompanying fractures, that fractures near a joint are more likely to be complicated by nerve injuries than those along the shafts of bones. They had seen more in connection with fracture about the elbow, although there were "some very interesting ones associated with wrist fracture." If it be recalled how large nerves and arterial trunks are arranged in very close proximity to the joints, while along the shafts they are considerably further removed, this observation will not surprise us. Fractures in the neighborhood of joints are likely to be caused by extreme violence, and as the tendons at the joints are very firm and compact, permitting but little expansion, the hemorrhage and effusion of exudate which severe trauma will almost certainly induce could hardly fail to bring more or less compression to bear on adjacent nerves. This explanation will not, however, serve for the musculospiral nerve, which is one frequently involved. According to Platt, involvement of this nerve is rare in supracondylar fractures, occurring only where lateral displacement of the lower fragment leaves a sharp, bony spike or ridge. "On this the nerve is immediately impaled, or later becomes adherent. Here, also, injudicious manipulative treatment may contribute to the local destruction of nerve tissue," a caution equally applicable to lesions of the ulnar and median nerves.

This observer has seen lesions of the ulnar nerve most often in internal epicondylar fractures, but occasionally in supracondylar fractures or in dislocations of the elbow joint. "The lesions are always incomplete, and may be due to a primary contusion or to secondary friction neuritis developing in the first few weeks. A mild transitory neuritis is sometimes seen in fractures treated efficiently, but the severe lesions are almost always due to ineffective or injudicious treatment—*e.g.*, imperfect reduction, clumsy manipulation, or forced movements of the elbow." And he adds, significantly: "Forced movements at any stage are always disastrous."

It should be remembered that the muscles served by these nerves are of quite as much importance as the nerves themselves. While restoration of function is a question of intact nerves to a certain extent,

it can not take place unless proper attention is given to healing of muscular lesions. Tinker, relating his experience in the World War, dwells upon the necessity of prompt "reconstruction surgery" which makes possible "the restoration of function to muscles and tendons whose movements are controlled by the injured nerves." He notes that those patients who had had immediate nerve suture at the front often had early return of function, and even if this was not complete, partial function was recovered, "and in all these cases the secondary operation was made much easier and the prospect of recovery of function greatly improved. Even in the case of wounds which became infected, the nerve frequently held together, making later reconstruction surgery much simpler." Compound fractures with open wounds which reached them infected were rendered relatively bacteria-free within a short time by the careful use of the Carrel-Dakin method, making it possible to skin-graft or turn flaps and get a rapid and satisfactory healing of the soft parts.

Such is the regenerative power of muscle that, left alone, it seldom causes much trouble. Most of the secondary muscle complications of fractures are due to improper handling, chief of these being Volkmann's or ischemic contracture. This results from constriction and interference with the circulation by too tight splinting or bandaging. If this is not speedily relieved, the muscles—especially those of the forearm when the fracture is near the elbow—will develop a condition described by Young as "a boardlike firmness, with, first, considerable and painful swelling. There follows on this a more or less degenerative change in the substance of the muscle fibres, even going on to a sort of hyaline necrosis." While the flexorpronator muscle is most likely to be affected, the other muscles will not escape unscathed, unless by some happy chance they failed to be exposed to the same compression. Rapidly increasing contracture of the fingers upon the palm, or of the entire hand toward the forearm, now follows. Even though no definite injury to the nerves can be established, there is frequently a definite loss of sensation in the affected parts, the forearm sometimes showing a certain amount of anesthesia toward light touch, pricking and changes of temperature. On the other hand, deep sensibility is likely to be exaggerated. The eventual outcome is decided atrophy and shortening of the muscles with accompanying permanent loss of muscular power. There will be marked flexion at the wrist and likewise at the phalangeal joints.

The warning held up by Roberts and Kelly is worth repeating: "Surgeons should be on the lookout for this serious impairment. It may arise from early or late excessive bandage pressure, or a too tightly applied plaster-of-paris encasement. Threatened gangrene from too tight dressings gives very marked symptoms; but the condition now being considered results from a much less degree of constriction. The patient complains of only moderate pain, or perhaps scarcely complains at all. There may be no marked swelling of the fingers and toes; perhaps only a little numbness mentioned. The beginning flexion of the fingers or wrist, or a deviation in the foot at the ankle, may scarcely be observed by the surgeon. He will, therefore, omit removing the retentive fracture dressing, or may reapply it with the same dangerous degree of pressure. The slowness of the process, compared with that which occurs in pressure gangrene, and the complaint of only moderate pain, are what fail to awaken suspicion of doctor or nurse that the blood is denied sufficient inflow to muscles and nerves. When the constriction is discontinued and the limb examined after the lapse of a few days, rigid contracture of one group of muscles has overpowered the opposing paretic group. The accompanying pallor of the hand or foot, the trophic ulcers of fingers and toes, and the impossibility of obtaining full active or passive mobility, confirm the diagnosis of Volkmann's ischemic myositis.

Of preferred treatments for these injuries to nerves and muscles in association with fractures, *prevention* easily stands first. Its application in the condition just discussed needs neither explanation nor emphasis. In what was said previously the advantages of obtaining asepsis of compound wounds, and prompt suture of injured nerves and tendons, has been indicated. The repair of nerves is a subject which could be spread over many hundreds of pages, so that to consider it here would be out of the question. The advisability of operative interference to release exudate and evacuate blood-clot, so that pressure on the nerves may be relieved and interference with its conductivity avoided, is another matter. In late cases the nerve may often be dissected free from compressing scar tissue, and resume nearly normal function. Where an old fracture which has never been properly reduced exists, the nerve will sometimes be found caught about the protruding end of bone.

The lesions of nerves and muscles which accompany fracture should be considered of equal importance with that of the bone itself. The failure to do this consistently undoubtedly leads to many cases of disability continuing for many months and often becoming permanent. In industrial work this becomes an economic question of first-rate importance, both for an injured workman and those upon whom the burden of compensation must fall. Looking upon this branch of surgery merely as an art—quite aside from social or economic importance—it at once appears that neglect of these coincidentally involved tissues is a serious technical fault, which mars the precision and success of the possible result, and creates dissatisfaction in the minds of all concerned. Textbook writers and instructors in medical schools should give more attention to this highly important phase of the "fracture question," so that the next generation of surgeons—if our own do not find it possible—may show greater willingness and aptitude in coping with this most important branch of their chosen calling.

REFERENCES

Dickson, F. D., and Dively, R. L.: Injuries to peripheral nerves associated with fractures. *Surg. Clin. North America*, 3, No. 6, 1719, December, 1923.

Lewis, Dean, and Miller, E. M.: Peripheral nerve injuries associated with fractures. *Ann. Surg.*, 76: 528, 1922.

Platt, H.: On peripheral nerve complications in certain fractures. *J. Bone and Joint Surg.*, 10: 403, 1928.

Rehn, E.: Ueber Muskelzustande bei Knochenbruchen und ihre Bedeutung fur die Frakturbehandlung. *Arch. f. klin. Chir.*, 133: 410, 1924.

Roberts, J. B., and Kelly, J. A.: Treatise on fractures. 2d ed. Philadelphia: J. Lippincott Co. 1921.

Tinker, M. B.: Wound excision and early reconstruction in the treatment of compound fractures. *Ann. Surg.*, 75: 38, 1922.

Young, Archibald: Ischæmic contracture of the forearm after fracture of both bones. *Clinical J. London*, 50: 129, 1921.

Discussion

DR. E. BENNETTE HENSON (Charleston): I regret very much that Dr. Sherman could not be here, but I am sure we have enjoyed Dr. Wagner's reading of his paper. I am glad to know that over in Pittsburgh they are using Dakin's solution, which we have always found satisfactory. The trend has been to get away from it.

In burns the paraffin treatment has not been satisfactory in my hands—I suppose, as Dr. Wagner said, because I did not know how to use it. In the last two years I have treated ninety-one severe burns with early debridement and use of tannic acid solution, ten per cent, with hourly spraying over the area for twenty-four hours, after which I use the sodium bicarbonate compress. I found patients got out of the hospital about twice as fast with this treatment as formerly with the older methods.

It is like "bringing coals to Newcastle" to talk about steel plates in the treatment of fractures when a man from Pittsburgh is present. I have used these different bone plates, but, somehow, I feel the indications for their use are limited. During the last six months I have taken out three sets of screws and plates which have been applied by men in other towns with resulting osteomyelitis at the site of the plates. One, as the result of plates put on four years; another plate, 15 years, and another one, six months previously. If these cases drift into Charleston at that rate, I wonder what the results are in other towns. I admit, in compound fracture of the type described by Dr. Sherman, the use of plates in stabilizing the fracture is perfectly applicable.

Plastic or reconstruction surgery is an interesting field. Coöperation of the patient with the surgeon is essential, because many operations are sometimes necessary before a good result is obtained. I recall one little girl, badly burned, in whom twenty-six operations were performed. She is now in school and is not ugly to look upon.

Some time ago I did a pedicle flap on the entire plantar surface of one foot. I was very much gratified to see the graft take in all but one spot. The man refused to let me continue to spread out this particular flap, but walked on it for about three months and was absolutely painless; the flap did not give him any trouble. The hair gradually left it and I believed he was going to get a good sole, but in four months he demanded amputation of the foot, which I had to do.

In discussing Dr. Rutherford's paper, I will confine my remarks to the medico-legal phase of nerve lesions complicating fractures. I am no lawyer, but I have found it well worth while to become familiar with law in its relation to medicine. Let us classify fractures into two groups: those fractures in which manipulation may produce or aggravate a nerve lesion, and those in which manipulation has nothing to do with nerve injury. In the first class, fractures around the elbow, especially those involving the epicondyle, the ulna nerve is frequently involved and manipulation may aggravate an existing lesion. The median nerve is also injured in the elbow fractures and manipulation may aggravate the condition. Fractures at upper third of fibula may produce an injury to the perineal nerve and undue manipulation may further injure the nerve. In fractures of the mid-third of humerus the musculospiral nerve, if injured, is most sure to be due to

the fracture and not from manipulation, and this holds true in practically all other fractures. The important thing to remember is the early recognition of nerve injury to prevent further damage by undue manipulation.

I am afraid that Dr. Rutherford left the impression that ischemic contractures are due to tight bandages. Again the medico-legal aspect comes in. It has been satisfactorily proven that ischemic contracture is the result of trauma from within and not from without. I do not think bandaging and splinting has anything to do with it. Dr. Dean Lewis is satisfied, as well as others, that ischemic contracture is the result of trauma from within; the muscles are filled with blood clots, these blood clots become organized, and the muscle tissue is displaced with fibrous tissue. Last year I treated a man from Kentucky for ischemic contracture of the forearm and he offered me quite a sum of money to go to Kentucky and testify against the doctor who had first treated him. I told him that the doctor's treatment had nothing to do with it, but that the injury itself was the sole cause of his deformity. The next evening I read in the London *Lancet* where so many pounds sterling was given to a patient as the result of ischemic contractures when it was proven in court by all experts that it was the result of tight bandaging. So I hope that American surgeons will be careful and not follow in the footsteps of their London brothers.

DR. R. H. WALKER (Charleston): Nowhere in the romance of surgery is there a more interesting, a more fascinating, nor a more neglected subject than that of industrial surgery. It is universally acknowledged that the surgeons and hospitals have not kept pace with the character of present-day injuries, such as the severe, crushing injury to soft tissues, the compound fractures, the fractured spines and pelves, from slate- and coal-fall, contact with modern machinery, the automobile and aëroplane. The present-day injuries are of a more severe type than those of twenty-five years ago, and present problems that are entirely new.

Too many of us are still attempting to treat modern injuries with ancient methods. It is necessary for us to modernize ourselves and the institutions in which we work, if we expect to get desirable results.

One of the results of the World War was the awakening of the profession to the realization of the importance of prompt and efficient first-aid treatment of the wounded, and the greatly beneficial effect it had in the prevention of infection, shock, loss of life, and the simplification of subsequent treatment and reduction of disabilities and loss of time.

Our own state of West Virginia has taken cognizance of the importance of first aid by passing an act, during the recent session of the legislature, making it compulsory for employers of labor, when five or more are employed, to procure and keep on hand at all times a first-aid kit, and to encourage the instruction of their employees in first-aid principles.

This idea has permeated industry. The industrialists of today are demanding of us better results with fewer disabilities. From the state's viewpoint, it means the conservation of invaluable man-power. The viewpoint of the employer is in reduction of his overhead charges, and increased efficiency. The viewpoint of the employees—that great army of men, women, and children who earn their living by the sweat of their brows—is relief from suffering and pain, and prevention of disabilities so that they may continue to carry on their work.

It is up to the profession, so to speak, to "deliver the goods."

In regard to delayed union or non-union, I feel that it is time to give more attention to the systemic treatment of the patient. Of course, the proper reduction (bone graft, etc.) is of primary importance. However, I believe that many a brilliant technical surgical procedure is doomed to failure because of the lack of appreciation of the important systemic treatment of the patient and the rôle it plays in the healing of fractures.

We may, with profit, take a lesson from our associates, the pediatricians, in their treatment of rickets and other metabolic disturbances. It is clinically observed that, in rickets, fractures do not heal until the rachitic conditions improve. It is observed experimentally, in animals fed on deficiency diet in calcium and phosphorus, that fractures do not heal. On correction of the diet the fractures heal. So why not pay more attention to the systemic treatment of our patients, with special attention to their diets?

Dr. Rutherford has given us some very practical ideas relative to the injury of muscles and nerves and the rôle they play in causing permanent disabilities. Too often we overlook the contractions of healing muscles until permanent injury has been done.

Quite often we do not discover paralysis of limbs until splints or casts have been removed. Then the

question arises whether the paralysis is due to the injury or to the treatment. This is a medico-legal question of great importance.

One of the first things to do in the treatment of fractures is to ascertain the condition of the muscular, the vascular, and the nerve supply of the injured part, and to observe the effect that reduction has on the vascular and the nerve supply to the part. If this was carefully noted, quite a number of disabilities would be avoided.

DR. RUSSEL KESSEL (Charleston): I have listened to Dr. Wagner's paper with great enthusiasm. Early in the year, Dr. Sherman visited the Kanawha Medical Society and gave us an exceedingly fine lecture on industrial injuries, and I am sorry that it was impossible for him to have been here today. However, I am certain that every one present has thoroughly enjoyed Dr. Wagner's paper.

I thoroughly agree with the statements made by Dr. Rutherford, and believe that, if a greater number of the surgeons in West Virginia who are caring for our industrial injuries would follow the routine that Dr. Rutherford has so well outlined, we would have less of a demand on our compensation fund.

During the past eighteen months I have been a medical examiner for the state compensation commissioner. There has been quite noticeable improvement in the end results obtained during the past year in the cases of the injured employees who are covered by the fund. This fact certainly signifies that our hospitals and surgeons are not only giving better services, but proves without a doubt that they are adhering to rigid principles of treatment.

The members of the surgical profession of West Virginia are in position to render valuable services to our state as well as to its citizens by adhering to strict surgical principles such as we have listened to this afternoon. Each year our industries send out large numbers of injured employees who become cripples for life and are unable to provide for themselves and families. It is true that compensation aids these individuals, but only to a limited degree. Experience has shown that the success of the end results of traumatic injuries are, in a measure, in direct proportion to the services rendered them at the time of the injury as well as during convalescence. Therefore, proper care of these individuals is an economic problem as well as a humanitarian one.

At the present time, physical examination prior to employment is being carried out by many of our larger industries. This means that injured men have great difficulty in finding employment, and, as a result, some time in the future West Virginia will virtually have an army of unemployed men who are unable to gain a livelihood and will become dependants of the state. This factor alone should be an incentive for us to seek better methods of treatment so that our disabilities may be decreased to the minimum.

DR. W. A. MACMILLAN (Charleston): The work of Dr. Sherman shows us real art. Some time ago Sir Arbuthnot Lane, of London, said the reason why the American surgeons were getting better results from the application of those plates was the fact that they were following his technique. The work as demonstrated here is really artistic, and I believe, in the hands of men trained to carry out that definite technique, good approximation of bones will meet with good end results. Relief from pain is secured by getting good approximation of bones. Where open operations are necessary, we will have less use for these traction methods and have less injuries done to our joints. I think a good many troubles in joint conditions that we are meeting with today are due to too much dependence on traction methods.

I was interested in following Dr. Collins' talk. In speaking of neurology, that for men—young men—who want to take up that particular specialty, the best place for the student of that particular subject was to spend a term, a summer vacation, in an neurological institution, where they could come in contact every day with nervous patients and note the symptoms of nervous diseases. In the P. G. clinics in New York, it is the custom with a good many men who intend taking up orthopedic work to spend much of their time in handling tools and becoming adept at that particular kind of surgical procedure.

Speaking of Dr. Rutherford's timely subject, it is a pity that we get good results as far as end approximation of bones is concerned and then have the humiliation of having pressure paralysis. It is something we all meet with, and I believe this is a great field for the physiotherapist as a post-operative procedure.

Going back to Dr. Sherman's subject of the hypochlorite solution, I believe, to follow out his suggestion and get into the open wound within the first eight hours, or as soon as the wound is produced and as soon as within the limits of good judgment it demands, that it is well to get your wound cleaned. We have been resorting to plain saline

solution; get the wound cleaned, approximation, good fixation splints, and see what results we can obtain. If we are going to have a drainage situation we can deal with it, whatever methods are best suited to the case. I believe that a very small percentage of the cases will meet with drainage later if timely cleanliness of the wound and proper approximation of the bone is resorted to at the time.

DR. WAGNER (*closing the discussion*): I will say, in answer to the question regarding fractures of the small bones of the hands and feet, it is our practice to get at least one-third surface approximation at the time of attempted reduction. If we can not do this, we do not hesitate to do an open reduction, affixing the bones with chromicized catgut. We have done this in many cases and it seems to do the work. This is usually followed by the application of a plaster cast to maintain the bones in apposition. The cast remains on a hand for six to eight weeks and on the foot for eight to ten weeks.

Regarding the question of osteomyelitis following the use of bone plates: I have been doing this work for the past ten years and have also observed Dr. Sherman's work for the same length of time. I have seen but one infection following open reduction, and this, I will say without exaggeration, was in over one thousand cases. If you do not know the technique, you can not do this work. I do not care who you are; you can not do abdominal surgery because you know bone surgery, nor bone surgery because you know abdominal surgery—one must have a knowledge of each. The principles of bone surgery have been laid down by Lane, augmented by Sherman, and must be adhered to. The case I referred to was in a man 54 years of age, suffering from a fracture of the femur. After operation his convalescence was normal for ten days, when an infection was recognized as being present in the wound, which we opened, isolating a colon bacillus infection and instituting Carrel-Dakin. At the end of eight weeks the plate was removed, the wound healed kindly, and in six months' time he was back to work, mining coal.

In compound fractures, ninety-eight per cent of the plates are removed; the other two per cent are permitted to, and do, heal in by cicatrization. I know a surgeon eighteen miles from Pittsburgh who has had many such cases in his experience. I, myself, have had five.

If there is infection in the cases following plating of simple fractures, the cause is not in the plates but in the operator or his technique. Recently there have been a number of plates broken after their application. This is unfortunate, but should not be held against the method or operator, but should be laid to the manufacturer, who did not follow the specifications of fabrication. These plates have been examined by our own chemists, as well as by several in Boston, who reported that the plates had not been properly manufactured and consequently were too brittle. There have been thousands of these plates scattered throughout the country, and no doubt there will be many cases reported where breakage occurred; should you hear of any, do not blame the failure on the method. The manufacturer is again making these plates as they should be made.

As to plastic surgery, I am sorry to hear Dr. Henson say he did not have the coöperation of the patient. No plastic surgery is successful without an absolute understanding with the patient before the endeavor and full coöperation on his part. The patient who does not coöperate can undo in a moment all that the plastic surgeon might have done in three weeks.

In cases of post-traumatic headache, we have been seeing more and more of them and we are realizing their true entity. In my ten years' experience I can recall seven or eight patients who complained of trephine syndrome and who, because we could not find any definite organic lesion, were put down as traumatic neurotics, and in our own mind thought to be malingerers. Recently I have learned my mistake, and have been more kindly disposed toward these poor devils. Often, many of them are curable. My conscience stings me and I feel we all should be a little more charitable to those patients who come in with the complications of headache, dizziness, spots before the eyes, etc., which are inexplainable on any other basis. There is definite function derangement and possibly on an organic basis which at present we do not know.

May I make a note on the malpractice cases? It strikes me we often go to court and testify for our colleagues that their practice was right, when, down in our hearts, we feel they did wrong according to our knowledge; but they did not do wrong according to their own knowledge. That is the object and purpose of all these scientific meetings—to disseminate information. A man probably treats his fractures as they are treated by the best in his community. The best of that community might not be the accepted or modern method; hence, his practice may be poor, but not malpractice. If you get me, I think there is a definite distinction there.

I enjoyed Dr. Rutherford's paper very much. I think a man who looks at a patient with a fracture and thinks of the bone alone is not a surgeon and should not be doing surgery. A fracture should not mean bone alone. It includes every structure of that particular part—bone, skin, muscles, blood vessels, nerves, etc.

I like his remarks on muscle and nerve paralyses in contractures, pointing to Dean Lewis's idea in this matter, although it is debatable.

Ofttimes, in these cases, these is a trauma which has been done to the muscles and soft parts at the time of the injury, and often an added factor, *i.e.*, too tight casts or splints, with resultant deformities. I saw a case of this kind in Louisville, Kentucky, in a man who had a fracture of the lower third of the right leg. This was put up in a plaster cast which was removed 36 hours later. That man has been two years getting back to work. It was 16 weeks before the bone united and no gross deformity or separation of the fractured parts. What happened? The bone should have united long before it did. I believe it was probably due to the cutting off of circulation and injury to the soft parts by too tight application of the cast. He has a resultant contracture of the muscles of his foot and leg and has been labeled a malingerer. I do not believe that he is.

To illustrate another point in Dr. Rutherford's paper: About three weeks ago I had three cases of nerve injury in the hospital at one time. On two cases I did a nerve suture and on one a nerve lysis. This last case was in a man 65 years of age who had been struck on the ball of the left thumb. He complained of severe pain in the tip of the thumb and the tip of the index finger. Because he had no objective signs, he was termed a malingerer. I might say that was my first impression. A simple exploration of the nerve sheath showed the nerve to the thumb and index finger caught in fibrous tissue. A neurolysis was carried out and the patient returned to his work in three weeks, after having been off a period of four months.

Another case was a man who suffered an injury to his right arm in an automobile accident. A piece of glass went through the soft parts near the radial nerve; he had a little sensation in the thumb but with a wrist-drop. A competent neurologist advised waiting. We waited six months, with no regeneration. It was his thought the nerve was still functioning because of the sensation in the thumb. An exploration was carried out and a small piece of glass was found still present, which had completely severed the nerve except one hairlike process just enough to carry the sensation.

The third case was a boy who had been injured in an automobile accident. A piece of glass had gone through the leg just above the popiteal space. He suffered a paralysis of the muscles below the knee. The wound healed in three weeks. The patient had only one area of sensation on the dorsum of the foot. Again the neurologist said "Wait." After a year and a half, no regeneration took place. Exploration showed complete section of the nerve, but nature had provided a little looping of what was apparently scar tissue between the nerve ends. A section of this was made and it showed the nerve fiber had jumped across or had been stretched in an attempt to unite the fully separated ends to a distance of two and a half inches. I might add, at this time, the patient has practically complete regeneration of his nerve.

The point I desire to make in these nerve injuries is: Consult your neurologist and then use your own judgment. Procrastination in nerve injuries, in my opinion, is wrong. Almost all of the nerves in the body lend themselves to easy exploration and this procedure very often means early recovery.

DR. RUTHERFORD (*closing the discussion*): In regard to whether there are injuries of the nerve at the time of the fracture, I am sorry that I can not agree with Dr. Henson.

I would like to recite to you a case which came into our hospital—a simple fracture of the middle third of the tibia and fibula. It is our routine to reduce our fractures, if we can, but not to put them up in a plaster cast as soon as they come in. We leave them alone for several hours, await swelling and such things as may occur. This particular case following a reduction was immediately put up in a plaster cast. He went along for several hours without any discomfort or pain. After this time he developed pain and discomfort. The cast was immediately taken off and there was a line of demarcation, with a complete paralysis of all the lower portion of the leg and foot. Did this come from within out, or from without in? The house man and all of us that saw and examined him know that he had no symptoms whatever of ischemic paralysis when he entered the hospital. He had only a simple fracture with perfect feeling, sensation and motion, and everything seemingly was all right until a few hours after the cast was applied. My opinion is that you can get ischemic paralysis from without the same as you can get it from within.

Just a word about burns. I was in Pittsburgh a few years ago, at which time I did not believe in Dr. Sherman's and Dr. Wagner's treatment for burns. I spent two or three days there and they certainly converted me before I left. I came back and immediately purchased an outfit and started to treat burns by their method. I have been using this treatment ever since and I get very happy results. If we get an infection in these burn cases and the temperature goes up, we immediately take off the dressing and use some hypochlorite or Carrel Dakin solution to clean up the burned area, and then put back on again the paraffin dressing. In removing this dressing you will be pleasantly surprised to see how easy it slips off, leaving a nice, oily appearance over the burned area, and very little hemorrhage, if any, resulting from the removal of the dressing.

We have gone along with this method of treating burns for the past three or four years in this way, and are very well satisfied with the results that we have been getting. I certainly do not know of a better method of treating burns today than the one described by Dr. Sherman's paper.

THE IMPORTANCE OF COMPLETE PERITONIZATION IN ABDOMINAL SURGERY *

By JOHN E. CANNADAY, M.D.
Charleston, W. Va.

I will make a very sketchy outline of this primary subject in connection with abdominal surgery.

It seems to me that many of the pitfalls and troubles that accrue to the man doing abdominal surgery are due to failure to cover up or adequately protect raw surfaces. I shall call attention to a few of the commonplace abdominal operations and to a few methods that I and my associates use for preventing the formation of adhesions. I might say that none of these methods are new. They are almost as old as the hills, and are gathered from many different sources.

Adhesions are the bane of the abdominal surgeon. Particular endeavor should be devoted to their elimination and prevention. Gentle handling of the tissues, the avoidance of sponging the intestines or parietal peritoneum, the use of the rubber dam in place of gauze packs and the careful covering of all raw surfaces, the use of very fine, plain catgut to secure parietal peritoneum in place when covering raw surfaces, all have their particular merit.

To deal with specific cases, I will take up some of the more commonplace operations:

In the performance of an appendectomy, it is very important that no raw surfaces be left. After ligating and amputating the appendix, covering the sam with a purse-string suture, we secure in place over

Fig. 1.—Method of Covering Raw Surface After Removal of Gallbladder.

this the ileo-cecal fold, which is almost uniformly free and present.

Speaking of the ileo-cecal fold, I had the sad experience, recently, of having to open the abdomen of a patient who had had an appendectomy not long since, and found some two or three loops of bowel adherent at the site of the appendix stump. I admit that probably would not happen once in a hundred times, but the hundredth time endangered the patient's life and she has had a very stormy illness. This thing probably would not have happened if the appendix stump had been carefully covered.

In regard to the stomach, the gastrohepatic omentum lends itself nicely to the covering of suture lines on the stomach wall. Particularly is this true concerning gastrotomy and resections, also pyloroplasties.

* Read before the Surgical Section of the West Virginia State Medical Association at Martinsburg, W. Va., on May 22, 1929.

The removal of the gallbladder leaves a considerable raw area underneath the liver. This can almost always be closed by suturing the liver peritoneum and allowing the liver to fold in on the raw surface. Certain tabs of gastrohepatic omentum can often be used to reinforce the liver sutures.

In the event of being unable to cover all raw surfaces with the above technique, one can take

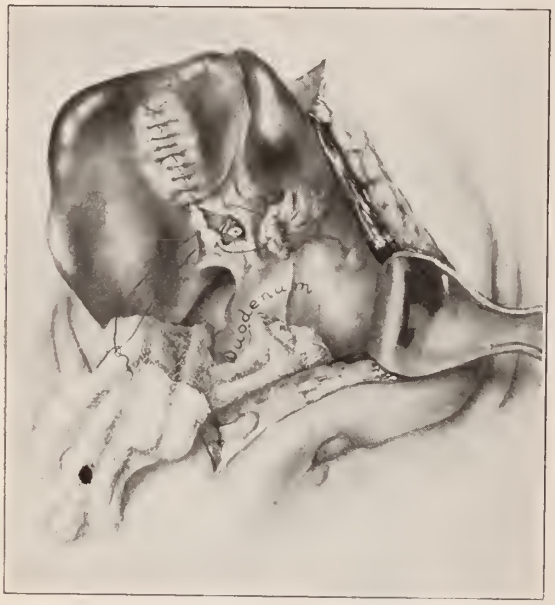


Fig. 2.—Method of Protecting Amputated Cystic Duct of Gallbladder.

a portion of the greater omentum for the same purpose.

Adhesions and obstructions are not infrequent sequels to césarean section. Titus has described a type of césarean section in which the incision in the uterus is made low down, near the bladder. A horseshoe flap of peritoneum is turned down first; after the extraction of the fœtus and the closure of the incision in the uterus, this flap is turned back and sutured in place, covering securely all the heavy sutures. If the opening is made in the fundus of the uterus, the suture line can easily be protected by attaching, with interrupted fine, plain catgut sutures, a tab of great omentum. Double naught (00) plain catgut is quite heavy enough for such purposes. I am of the opinion that much post-operative trouble follows the use of heavy suture material in the parietal peritoneum.

Following various pelvic operations, perhaps, is the greatest incidence of strictly operative obstruction. For instance, after the removal of a tubo-ovarian abscess, an adherent ovarian cyst, a big adherent tube, or the separation of adherent surfaces between the posterior wall of the uterus and the rectum, large raw areas are left. At times these can be readily covered by adjacent lax parietal peritoneum. Again, this can not be attained, and one may of necessity have recourse to the use of the rectosigmoid fold. This can be attached in place by an occasional interrupted suture of fine, plain catgut. This particular portion of the large bowel tolerates liberties and insults with a particularly good grace, and no evil after-effects have been observed.

After hysterectomies, one can usually easily cover all raw surfaces, securing a safe and artistic-looking job. There may be instances, however, particularly when badly diseased adnexæ have to be removed, when, even after making use of the edge of the bladder peritoneum, of the broad and round ligaments or tubes, one may at least once in a while feel the necessity of anchoring the rectosigmoid fold in place in order that the small intestines may be kept out of trouble.

The patients that have undergone numerous abdominal operations, especially when some of them

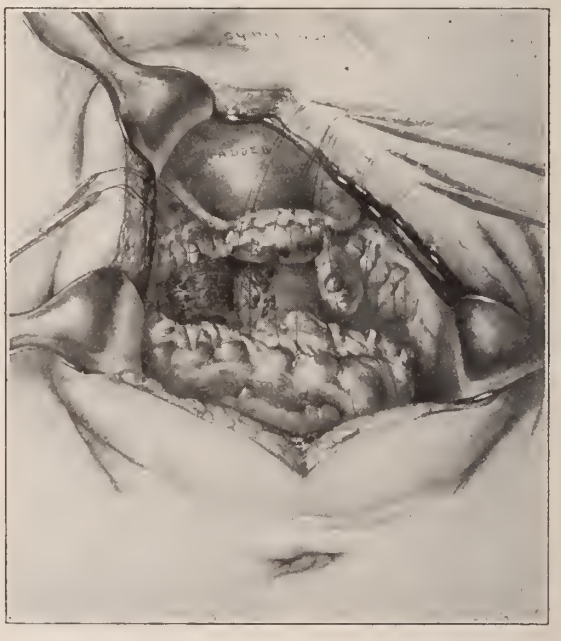


Fig. 3.—Method of Protecting Raw Surface in the Pelvis After Pus Tube Operation.

have been done for the relief of inflammatory lesions, become at times reduced to what Joseph Price was fond of calling "surgical junk." This is the type of case that is prone to recurrent intestinal obstruction. In dealing with such, we often find numerous loops of small bowel firmly glued to some offending portion of the parietal peritoneum. After separating such, we find numerous large, raw surfaces or raw

areas that must be covered in some way. If we use the bowel itself, we secure kinks that may give further trouble. If the patient has a voluminous omentum, it is easy to apply an omental patch and feel that the patient will "live happily ever after."

Finally, we should avoid prolonged exposure to the air, all unnecessary trauma from gauze or rough

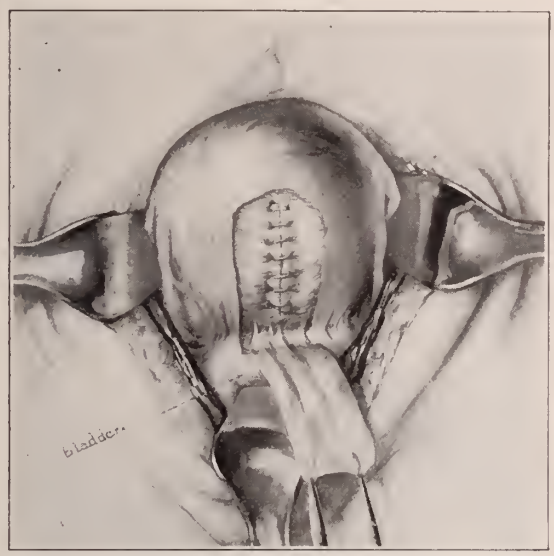


Fig. 4.—Method of Titus, Protecting Suture Lines in Cesarean Section.

handling, and show the tissues the greatest gentleness and respect.

Coffey devised a special technique for the walling in and rendering extraperitoneal, pelvic drains, principally by suturing parietal peritoneum from the rectosigmoid fold about such drains.

A word might be said with reference to the closure of the peritoneum. I take it that most surgeons follow the favored dictum of Dr. William S. Gardner, of Baltimore, who always sutures the appendix, the peritoneum, with the "sunny side" up. In other words, the raw edges are rolled outward and only the serous surfaces are brought together. We have Dr. Gardner here this afternoon, and I hope he will elaborate on this a little bit.

Of course, we have all noticed, when opening the abdomen that has been previously operated upon, how it is not an infrequent occurrence for either omentum or intestines to be adherent to the parietal peritoneum. I think that is often the result of failing to follow Dr. Gardner's advice.

The omentum plays such a large part as a protective agent that I always feel much safer when it is present in plenty. I sometimes think it would not be a bad idea to lightly attach it to the incision in the peritoneum as a protection.

Discussion

DR. R. J. WILKINSON (Huntington): I do not think we can be too careful in our technique, because all of us know the danger we encounter in adhesions.

I do not purpose to get into a discussion with Dr. Cannaday, because he and I have different views. I believe we all agree that, where it is possible in an abdomen, raw surfaces should be covered up. I do it absolutely except in the particular instance of the appendix. I was trained in a school that did not believe in burying the stump, and I have seen no bad results.

There is one thing we have adopted in our technique of abdominal surgery, and it has some bearing in preventing adhesions. That is washing out the abdomen or removing blood clots by suction. Not infrequently these blood clots, left in the peritoneal cavity, become organized and lead to complications.

DR. W. S. FULTON (Wheeling): The impor-

Fig. 5.—Method of Covering Suture Line After Cesarean Section.

tance of covering raw surfaces under the liver following cholecystectomy is certainly one point which has been and is being neglected in gallbladder surgery. We see very few surgeons taking the time to cover the raw surfaces about the stump of the cystic duct. I am sure Dr. Cannaday has so emphasized

this point that we will all be more careful. This paper is very timely, indeed.

Dr. Crile gave to surgery a wonderful aid in preventing adhesions when he developed his anoci-association technique. It is not an easy technique for

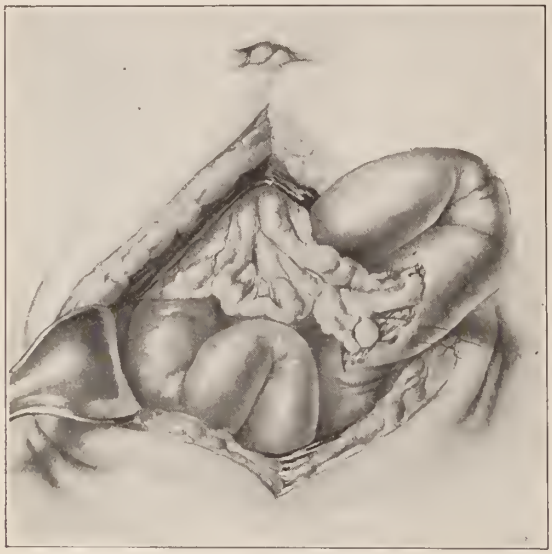


Fig. 6.—Method of Protecting Raw Surfaces on Bowel with Omentum.

the average surgeon to follow. The operator must keep his mind continually on his work and operate as though the patient were awake. To bruise the tissues means that you are going to have a response from your patient which will interfere with your work.

Fig. 7.—Method of Closing Over Appendix Stump.

It is the best anesthetic to develop a so-called feather-edge technique. For a number of years I used it entierly, and when I use a general anesthetic with complete ether narcosis I feel that I have been fairly selfish and have not been as considerate of my patient as I should have been.

DR. WILLIAM S. GARDNER (Baltimore, Md.): Dr. Cannaday has covered his subject so completely that there is very little left to do except put a little emphasis on what he has already said. There is no question but that the covering of every abrasion of the peritoneum is of great importance in getting good permanent results.

In an appendectomy I have always inverted the stump. I do not ligate the stump as Dr. Fulton stated that he does; but I do pass a ligature deep enough into the tissues to tie off the small vessels of the appendix. The reason I do not tie off the stump is that, if that is done and the stump is then inverted, a small, undrainable cavity is made which might possibly give trouble.

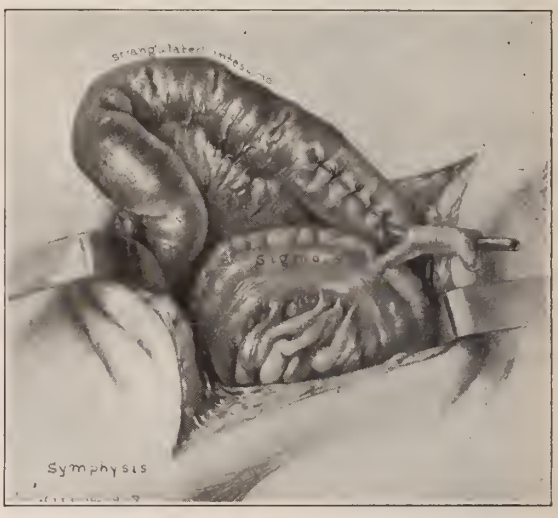


Fig. 8.—Method of Protecting Enterostomy Tube by Sigmoid Appendices Epiploica.

After the removal of a tube or a tube and ovary it is very easy to cover up the raw surface, either by tying together the proximal and distal ligatures or by putting a third stitch which brings the stump of the broad ligament to the fundus of the uterus.

In the cases of supra-vaginal hysterectomy, the first step in the closure is to take a wide peritoneal cuff of peritoneum from the anterior uterine wall, before the cervix is amputated. Then, after the ovarian and uterine vessels are tied off, a stitch is passed into the side of the cervical stump, deep enough to catch the small vessels in the wall; tie it, carry the needle through both layers of the broad ligament at about its middle, then into the stump of the broad and round ligaments, out through the round ligaments just beyond the ovarian ligature,

and tie. This stitch closes all the gaps in the broad ligaments, turns the stump of the round ligament downward and secures it to the stump of the cervix. This is repeated on the other side. The peritoneum on both sides of the cervical stump is closed and the stump is anchored to the round and broad ligaments. The cervical stump is covered by stitching the peritoneal flap dissected from the anterior wall over the top of the stump to peritoneum on the posterior wall of the cervix.

In closing an abdominal wound it is a common practice to bring the peritoneal edges together with an over-and-over stitch. This is unsatisfactory because there are some raw borders left. They frequently result in adhesions of the abdominal contents to the line of incision, and, as shown by Dr. Cannaday, are occasionally followed by intestinal obstruction. This can be avoided by closing the peritoneal wound in such a way that it presents a smooth surface to the abdominal contents. Grasp both ends of the cut peritoneum with forceps and lift up. This throws the edges up; sew them together with a back-and-forth harness-maker's stitch. The result will be good union, no adhesions, no obstructions.

DR. CANNADAY (*closing the discussion*): Dr. Wilkinson spoke about not covering over the appendix stump. I know many high-class surgeons who follow that technique with an amputated appendix. I will say, from my own observation, that probably ninety-nine times out of a hundred they get away with it very nicely; but once in a great while it will cause trouble. I have one specific case in mind that happened very recently, in which there was no question as to what caused the trouble. It will cause serious trouble at times. It may be, in many instances, the results of adhesions are not apparent.

The peritoneum certainly can take care of a great many things—and generally does—but, once in a great while, it goes wrong and gets into twists and snarls. We do not know why. The point that Dr. Wilkinson made, in regard to the advisability of insisting on evacuation of blood clots, is very well taken. Years ago, we used to hear some men say there are certain clots there; leave them there. I have never subscribed to that theory. If a blood clot is left anywhere, it becomes organized and it may, particularly in the abdominal cavity, result in all sorts of complications. I think it is important to remove the loose blood by suction and by washing out with saline solution.

THE TREATMENT OF ENDOCERVICITIS *

By B. C. JOHN, M.D.
Morgantown, W. Va.

Few gynecological subjects have received as much discussion as chronic endocervicitis, or so-called chronic cervical catarrh. The fact that this affection occurs in approximately eighty-five per cent of all women indicates that treatment of this condition is as yet not entirely satisfactory, due chiefly to the fact that treatment is directed at the manifestation of the disease rather than at the underlying pathology.

It is not with the purpose of advocating something new that this short article is presented, but rather to recommend an operation thought to be worthy of more general acceptance because of its ease in being carried out and because it can be used in one's office.

Chronic endocervicitis is essentially an infectious disease. It is true that in some women a hypersecretion of the cervical glands does cause a discharge, which is entirely healthy. But it is not that of which we speak, but of the true pathological condition. The most common cause of the condition is gonorrhea. Trauma inflicted during labor, with subsequent infection, is also commonly responsible, particularly those lesions associated with laceration and eversion of the cervical lining. The condition may be favored by instrumental examination or bad technical operative procedures. It may also be excited by the repeated applications of cauterants or strong, irritating medical applications.

Endocervical inflammation usually begins about the external os, showing a varying degree of epithelial desquamation. It may involve a part or all of the vaginal portion of the cervix and extend through the cervical canal as far as the internal os. Usually, a sharp line of demarcation is seen between the normal cervical mucous membrane and the eroded, inflamed area. This line is generally irregular and indicates the extent of destruction of the superficial epithelium. The loss of structure involves several layers of the epithelial covering, so the region of inflammation may be moderately excavated and below the level of the surrounding normal tissue.

According to Ruge and Veit, the epithelial changes are not degenerated, but are substitutional. The investigators quoted claimed that the endocervical lesion is not due to the loss of substance, but

* Read before the Monongalia County Medical Society, September 3, 1929

is an instance of the substitution of cylindrical epithelium for the squamous variety of cells normally present in this region.

The striking redness attained by the eroded areas is due to the substitution of a single layer of cylindrical cells in place of the manifold layers of squamous cells, allowing the underlying vascular zone to show through. In the papillary variety, the epithelial cells in irregular manner throw themselves into papillary growths.

In the glandular type of erosion the gland ducts become occluded. The gland cavities distend and these project upon the surface of the cervix as cystic nodules of varying size. The inflammation extends to the submucous layer and round-cell infiltration occurs in this region, resulting in hyperplasia. The cervix becomes large, boggy and edematous. Organization of the exudate follows, with contraction and obliteration of the ducts of the glands. As a result of this occluding process, the secretion of the glands, if imprisoned, results in cystic bodies appearing in the cervical lips. Because of the chronic inflammatory changes that occur in this condition and the extensive proliferation of cells, it clearly places this disease on the borderline of malignancy.

Treatment.—Four different types of therapy are chiefly used in the treatment of this condition, depending upon the character and extent of the disorder, namely: medical, radio-active, cauterization, and surgical.

Simple medical measures may be used in the mild types of cervical inflammation, namely, in those cases where the process is limited to the superficial endocervix. But even in these cases it is of small value. Applications of argyrol (25%), iodine (Churchill's tincture), or nitrate of silver (10%) are used for this purpose. These should be made every other day after first cleansing the affected area with cotton saturated with sodium bicarbonate solution. The application should be carried into the cervical canal as far as the internal os and allowed to remain for a period of five minutes.

Engorgement should be relieved by the introduction of glycerinized tampon or by puncture. Cystic bodies should be punctured and curetted. Also, depletion and anti-inflammatory action may be accomplished by hot vaginal irrigation twice a day.

Radiotherapy.—Radiation of chronically inflamed cervices has been associated with extremely gratifying results. Small doses (50 milligrams) should be used, and exposure should be of short duration (four to six hours). Radium destroys the infection and rapidly brings about a relatively normal condition. Extreme caution should be observed in the employment of radium, especially in young women, or in women during the child-bearing period. This is also true if infection is present above the internal os.

Surgical.—The employment of surgery should be limited to those cases failing to respond to the measures outlined above, or to those associated with lacerations with distinct surgical indications, Strumdorff's operation being the one of choice.

The operation I wish to bring to your attention is the use of electrocautery. The essential steps of this operation are as follows: The cervix is exposed by means of a bivalve speculum. The cervix is first dilated, if possible, the lips being held as widely apart as possible by double hooks or bullet forceps, anterior and posterior.

The small cautery (Percy rheostat) with nose-blade attachment is placed in the external os and the heat turned on. This is painless if only allowed to go as far as the mucous membrane. Incisions are now made into the endocervical tissue, parallel to the canal and radiating from the center like a cart wheel. The incisions should be carried as high as the internal os. If there is eversion of erosion the incisions may be carried out to the healthy membrane. Deep incisions must be done under anesthesia. The use of applications of 4% cocaine solution will usually stop pain, except where deep incisions are necessary. Usually one cauterization is sufficient, but the procedure may be repeated if necessary. If one fears stenosis, the anterior lip may be done and allowed to heal before continuing the procedure on the posterior lip.

This relatively simple procedure has been brought before you because it does not seem to be in common use, although advocated and used by Dr. Arthur H. Curtis, of Chicago, with excellent results. It seems to embrace the important principles more easily than more elaborate procedures, namely: it promotes free drainage and destroys diseased tissue. It does not produce stenosis and it does not discourage the patient with long, drawn-out treatment.

DIAGNOSIS OF UPPER URINARY TRACT LESIONS *

By W. HOUSTON TOULSON, M.D.
Baltimore, Md.

There are many serious conditions that develop in the upper urinary tract without producing definite symptoms. So commonly does this occur that urologists suspect this tract in many of the vague abdominal discomforts.

Uremia may occur before the kidneys are even known to be damaged. Silently the pathology progresses. Gastrointestinal and other symptoms hide the true condition, and only repeated urinalyses lead to the diagnosis of renal disease. Cystoscopy may be done with little or no risk to the patient. It is uncomfortable, it's true, but in view of the light it throws on the patient's condition it is absolutely essential to establish the diagnosis of renal lesions in suspected cases. If time is taken to explain to patients what the procedure is expected to accomplish, practically every one of them will consent.

Probably one of the most difficult problems the urologist has is diagnosing and treating cases of persistent pyelitis. In order to benefit these patients, it is necessary to know the extent of kidney damage, the causative organism, and to establish free drainage. Fortunately, most of the cases of pyelitis clear up with medical treatment. In the obstinate cases the exact pathology must be known and local measures instituted by instrumentation.

If the infection in the kidney pelvis is limited to the mucous membrane, the treatment resolves itself into establishing proper drainage, lavage of the pelvis, forcing fluids, changing the reaction of the urine, and clearing up the various foci of infection. If the disease has progressed far enough to involve the deeper structures of the wall of the pelvis and has extended into the kidney substance, the process takes on a more serious aspect. These cases require constitutional care to build up resistance in addition to local measures of kidney lavage, urinary antiseptics, etc.

Because of the chronic cellulitis in the wall of the ureter it becomes tortuous and constricted, making dilatation difficult and, in some cases, impossible. The kidneys then become further infected; pyelonephritis and pyonephrosis follow, and the kidney is destroyed. One often sees this chain of events follow a long-standing pyelitis, if untreated. Urinary stasis is always followed by infection, so, where there exists ureteral kinking from chronic ureteritis, the kidney sooner or later is destroyed. This same thing happens from angulation of the ureter due to aberrant vessels.

Patients with chronic pyelitis usually have an abundance of pus in the urine, making the diagnosis fairly simple. The technical difficulties of the instrumentation necessary to treat them occasionally taxes the skill of the most accomplished operator.

It is quite true that, occasionally, there are patients who have symptoms referable to the urinary tract that no amount of painstaking examination can find adequate pathology, and the most common class of cases in this category are those patients with renal hematuria. Many of these cases have to be observed over a long period of time before the pathology may be demonstrated.

Early tuberculosis of the kidney may be extremely difficult to diagnose, even though rather marked symptoms are present. I believe most urologists are of the opinion that a painstaking search of the urine, collected by ureteral catheterization, for tubercular bacilli is far more satisfactory than guinea-pig inoculation. When the tuberculous process in the kidney has advanced it becomes relatively easy to diagnose by means of the cystoscopic findings and pyelograms. Far advanced renal tuberculosis may occur without commensurate urinary changes, and occasionally the urine may be intermittently entirely negative on examination, with the possible exception of its marked acidity.

Sometimes a secondary infection of the kidney engrafted on a primary tuberculosis may confuse the diagnosis of the underlying condition. This situation is to be always considered in long-standing and recurrent cases of pyelitis and especially those patients that do not improve with the usual routine measures. Ureteritis and the changes incident to it is assuming a prominence very well deserved in urinary tract pathology. Largely due to the efforts of Dr. Hunner, this condition no longer remains unnoticed. Many urologists will doubt the frequency of ureteral stricture, but few will question it as a definite pathologic entity. Often the interpretation of pyelograms occasions differing opinions of urologists, even in the same clinic.

Certainly it is acknowledged that pathology begins in the ureter and gives rise to such changes that gradually effect the destruction of the kidney. Ureteral strictures may produce this damage with-

* Read before the Cabell County Medical Society, September 12, 1929.

out symptoms, or at least with very slight symptoms, though nearly every patient has vague abdominal discomfort, pyuria, and frequency. Dr. Hunner's method of detecting ureteral strictures makes the diagnosis easy in the majority of cases, though, as I say, the "hang" of the wax bulb and the "spindles" of the ureterogram afford very active discussion sometimes as to whether or not they exist. The etiology of ureteral strictures is still obscure.

The subject of ureteral calculi has to be discussed with ureteral strictures, for they are intimately associated. An impacted ureteral stone is often found behind a strictured area. The diagnosis of ureteral stones by a plain x-ray depends on the size and the chemistry of the stone. I heard a very prominent röntgenologist say that, in his opinion, nearly thirty per cent of ureteral calculi were missed in a plain x-ray. The urologist is concerned not alone with his effort in dislodging the stones, but with the damage done to the upper urinary tract and its repair. After the ureter has been dilated and the stone removed, drainage must be reëstablished and the infection cleared. The technical difficulties concerning the diagnosing and removal of the calculus depend on the size and location. Ordinarily, the lower down the ureter in location, the easier is its removal effected; a great amount of hydroureter with loss of elasticity of its walls behind an impacted stone usually indicates open operation. The vast majority of stones, however, may be removed by ureteral dilatation. The "wax bulb" method of diagnosis is not as satisfactory in the water method of cystoscopy as with the air method, and tiny stones are often missed, but usually escape with wide ureteral dilatation. The presence of a ureteral stone leaves its mark often as a localized strictured area necessitating later ureteral dilatation if further stone formation is to be avoided.

Tumors of the kidney are relatively easy to diagnose now. Hypernephroma, adenocarcinoma, pelvic papillomata, epithelioma and cysts can all be differentiated. The initial symptoms of all of these tumors is bleeding; this does not mean finding gross blood in the urine necessarily, but intermittently finding red blood cells. I need not discuss how important it is to make an early diagnosis in these cases. By the time we are able to palpate the renal tumor, it is often hopelessly inoperable. In the hypernephroma and adenocarcinoma cases, the metastasis takes place so quickly, due to the vascularity of the kidney, that it is imperative to make an early diagnosis; often the appearance of red blood cells in the urine is the only indication for thorough investigation.

Practically always can these tumors be diagnosed by means of ureteral catheterization and pyelograms. There are so many normal variations of pyelograms that occasionally early tumor formation of the kidney may only be revealed by repeated examinations at sufficient intervals to detect the growth of the tumor giving rise to changes in the pyelograms. Hypernephroma, adenocarcinoma and cysts of the kidney substances, and papilloma and epithelioma of the renal pelvis are ordinarily all detected and differentiated by the various changes in the configuration of the pyelograms. Hypernephroma gives quite a distinctive, spiderlike appearance; adenocarcinoma and cysts show a bulging into the pelvis, while papilloma and epithelioma show filling defects.

I have tried to briefly summarize some of the important diseases of the kidney and ureter and to emphasize a more thorough consideration of the urinary tract in making a diagnosis. Of course, every one of us who is trained in a special field is apt to be overenthusiastic in his specialty, but when you consider that practically ten per cent of postmortem examinations show pathology in the urogenital system, I am sure you will agree that it is to be constantly considered in the presence of disease

---

A PLEA FOR A CLOSER COÖPERATION BETWEEN GENERAL PRACTITIONER AND SURGEON IN THE ACUTE ABDOMEN *

By E. T. W. HALL, M.D.
Weston, W. Va.

This subject is too large to be completely covered in the time allotted for a paper of this kind. The day of the "lone ranger" in medicine and surgery is past. The surgeon and general practitioner must lean upon each other. I do not expect to advance anything novel or startling, but hope to make a synopsis of old and accepted views in such a way that the general practitioner and surgeon will make a closer study of their cases, utilizing all modern methods of diagnosis, coöperating and correlating their findings, thereby rendering a service that is to the best interests of their patients. In this paper I shall stress the diagnosis, merely suggesting the proper treatment or operation.

* Read before the Central West Virginia Medical Society at Webster Springs, W. Va., on July 17, 1929.

It is estimated that about ninety per cent of the patients seen by a physician are handled successfully. It is in the remaining ten per cent that coöperation is needed. The acute abdomen cases come within this percentage. The physician usually sees these cases first, and refers them to the surgeon. Often, the life of the patient hangs on the ability of the physician to make a correct diagnosis, the treatment instituted, and the advice given. Time is of vital importance, and every hour of delay in some of the cases increases the danger.

I fully realize the embarrassment under which the physician is placed when the patient and family refuse to follow his advice and will not, or can not, enter a hospital. Practically always, an acute abdomen is a hospital case. However, not all cases should be operated upon; in fact, some are made worse by operation. To rush a patient to the operating room with insufficient evidence of the pathology is bad surgery, and brings surgery into disrepute. After all, our object is to relieve and cure the patient. There are two extremes: the surgeon that will operate upon any patient whom he can scare or persuade into giving consent to an operation, and the physician who never makes a correct diagnosis until the patient is moribund. One is just as dangerous as the other. It is a significant and laudable fact that the vast majority of the surgeons and physicians are honest and conscientious.

I may be old-fashioned, but I believe that nothing should deter us from making a thorough examination of the patient from every angle. A complete history is of vast importance. Listen attentively to the patient. Much that he may tell you will not be of any significance, but by persistent and painstaking questioning you will be able to bring out the salient facts bearing on his present illness.

Vomiting, nausea, pain and its character, whether continuous or intermittent, and the location of the pain, are all to be considered. Observe the patient's facial expression; note whether the features are drawn, pinched, flushed, or cyanotic. You can not see a pain, but you can make a very close estimate of the amount present. The temperature, pulse, and respiration will give a fairly accurate idea of the intensity of the infection. Expose the abdomen and note carefully any deviation from the normal. Combining percussion, observation, and palpation, go over each zone systematically. Note the location and amount of rigidity, and of tympani, if any; the presence or absence of fluid in the peritoneal cavity; the site of all painful areas; examine all the abdominal rings for a possible hernia; the discovery, if present, of a palpable tumor, its probable connection, and whether movable or immovable.

I was extremely fortunate in being in attendance and listening to that master clinician and surgeon, the late Dr. John B. Murphy, when his surgical clinics were being compiled. His five diagnostic methods, which were original with him, were then undergoing a crucial test in his clinic as to their value, and have stood the test of time.

The first is the "fist percussion" of the kidney, and is very valuable in determining the presence or absence of an acute pathological condition within the kidney. It is analogous to striking a distended urinary bladder, and if a pathologic condition be present the result will be decidedly apparent. It is important to test out the sound side as a control. A second method, called the "hammer-stroke percussion," depends upon the same principle as the preceding one. Its use elicits the presence of an acute infection of the gallbladder, or acute obstruction of the cystic or common duct, with or without infection. "The deep grip palpation" is used somewhat similar to the above in the examination of suspected gallbladder disease. Still another method used by Dr. Murphy was called by him the "piano percussion." This is a very delicate method, and takes some time to perfect the technique necessary to obtain good results. It is used to demonstrate a small quantity of fluid or exudate in the abdominal cavity, resting on the hollow viscera, the intestine, and is based upon the peculiarly characteristic percussion-note given off when the abdominal wall over the fluid is struck by the four fingers, one after the other, beginning with the fourth and rapidly going to the index finger. The fifth is "comparative bimanual examination" or the simultaneous palpation of both iliac fossæ of suspected acute appendiceal involvement. We have all noted cases where there is considerable trouble in the appendix, wherein the affected side offers greater resistance to the examining hand. So it is with the lightly involved appendices—those cases with slight recurring attacks; the atypical cases—that this test is most serviceable. The presence of gunshot, stab, or other wounds are readily apparent by a very superficial examination, and from the location, combined with other symptoms, will lead one to suspect the presence or absence of a serious injury to some important organ in the abdominal cavity, such as the liver, spleen, stomach, intestines, kidneys, urinary bladder, pancreas, or mesenteric blood vessels. In women, the examination should

include the uterus and adnexia. By this time we should have gained a fairly good knowledge of the disease or diseases with which the patient is suffering.

We are now ready to make use of the information which the laboratory will furnish us, ever bearing in mind that the laboratory findings are only an aid in making a diagnosis, and if they do not agree with the symptoms found, both objective and subjective, the report is wrong or incomplete. The x-ray may show the presence of gallstones, a stone in the pelvis of the kidney, ureter, or urinary bladder, or some gross pathology of the gastrointestinal tract. A chemical and microscopic examination of the urine may show albumen, pus, sugar, or epithelial casts. A blood count will show an increase in the number of white blood cells if there is much infection. Unfortunately, a leucocytosis does not locate the site of the infection. A red blood count, by a decrease in the number, will indicate an anemia and will also occur in an internal hemorrhage. Where there is a gastric crisis due to locomotor ataxia, a Wasserman test will clear up the diagnosis.

In some cases of exophthalmic goiter we have gastric and intestinal symptoms that simulate acute abdominal conditions. A basal metabolic estimation will clear up the condition.

In considering the diseases that more commonly cause acute abdominal conditions, I will place the acute appendix at the head of the list. The diagnosis of a typical acute appendicitis should not be difficult. The atypical attack, and where it occurs in children, is not so easy. When we remember that appendicitis has a rather definite course, ushered in by pain in the gastric region usually, which in a few hours locates at or near McBurney's point, and nausea or vomiting in an hour or so after the beginning of the pain, followed by tenderness and rigidity in the right iliac region, with an increase in the pulse beat, elevation of temperature, and leucocytosis. These symptoms may all clear up in two or three days and the patient become apparently normal, followed in a few weeks or months by another attack; or the inflammation of the appendix may increase and spread, resulting in gangrene and general peritonitis or a walled-off abscess.

In order to relieve the tension of the abdominal muscles, and lessen the pain, the patient will flex his right leg. When the appendix becomes gangrenous and ruptures, for a few hours the patient becomes easier, followed by a return of the pain, vomiting, tympani, with all the symptoms of a progressive peritonitis. If not relieved, death ensues, due to the toxemia.

It is in these suppurative cases that most of the mortality occurs. The following preoperative treatment of an acute appendix is true, in a general way, in most other acute abdominal infections and lesions. A purgative should never be given until the diagnosis is absolutely made, and usually not then. In so far as an acute abdomen is concerned, it is a calamity that castor oil and sulphate of magnesia were ever discovered. Their use can not be too vehemently condemned. By increasing peristaltic action of the intestines, they undo what nature is trying to do—wall off the area of the infection. A low soapsuds enema is the most that is allowable. Absolute rest should be insisted upon, and an opiate if needed. Limit liquids, and operate as soon as possible. A "pus case," theoretically, should never occur; but, for various reasons, it does. The mortality in the last few years has not been reduced as it should have been, and has been due, in most cases, to the needed operation being deferred.

The physician or surgeon is justly blamable when a patient comes to the operating table with a gangrenous appendix, if seen early, and if he has control over the action of his patient. As I see it, the most promising plan of procedure to reduce the mortality is the making of an early diagnosis, early operation, persuasion of the few physicians that still persist in prescribing salts, castor oil, or some other drastic purgative, to change their method, and the education of the laity along the same line.

Pneumonia in children: How often pneumonia in children has been mistaken for an acute appendicitis, I am unable to say. It is true there will be some tenderness and pain in the epigastrium, with more or less rigidity of the right rectus. The temperature range will be higher, the pulse more rapid, and the respirations more accelerated than one would expect in an acute appendix. By careful palpation of the abdomen, no sensitive spots will be discovered. I learned my lesson twenty years ago. I had diagnosed an appendicitis in a child, late at night, and ordered it to be prepared for operation early the following morning. On returning to do the operation, I was informed by the nurse that the patient probably had pneumonia, and, on examination, I found that to be true. The lower lobe of the right lung was completely consolidated with lobar pneumonia. Since that time I have been able to rectify the diagnosis, on several occasions, of patients

who had been admitted to the hospital with a diagnosis of acute appendicitis.

Stone in the kidney and pyelitis have often been mistaken for appendicitis. Careful and repeated examinations of the urine will establish the diagnosis. The pain experienced in a renal calculus is usually more severe and requires more morphine to allay it. It begins in the loin and is transmitted to the thigh. Murphy's "fist percussion" sign will be present. The pain will be greater, but the patient will not appear to be as ill as in an acute appendicitis. It should not be forgotten that appendices that are located low in the pelvis may cause painful micturation and inability to void urine.

A right ovarian cyst, twisted on its pedicle, might be mistaken for acute appendicitis. A bimanual palpation will clear up the diagnosis.

Ruptured gastric or duodenal ulcer is one of the gravest acute abdominal conditions with which I am acquainted. At first, it might be mistaken for appendicitis, but the boardlike rigidity, simulating the rigidity of all other acute conditions in the abdomen, once felt, will make a lasting mental impression. The acute pain, at first in the gastric region, rapidly extending all over the abdomen, attended by increasing tenderness and tympani, collapse, pinched features, increased pulse-beat and respiration, with a previous history of gastric ulcer, can scarcely be mistaken for any other condition. It is impossible, in all cases, to obtain a history of gastric ulcer; but, with the symptoms previously mentioned, one need not go astray in making the diagnosis. The life of the patient depends on an early operation. Every minute of delay lessens his chances for recovery. As to the character of the operation, it should be the shortest and simplest possible that will accomplish its end, that is, closing the perforation. One should not forget that, in cases of this kind, there may be more than one ulcer.

Intestinal obstruction: An important symptom of these cases is the character of the pain, which is crampy, wavy, and intermittent, as the peristaltic action of the bowel endeavors to overcome the obstruction. The presence of abdominal scars, with a history of an operation for a "pus case" of appendicitis, or some other acute infection of the abdominal cavity, should lead one to suspect that adhesive bands were the cause of the obstruction. Adhesions may occur as a sequel to a very simple abdominal section, either with or without an infection of the operative wound. The presence or absence of a strangulated or incarcerated hernia should be ascertained. For diagnostic purposes, the primary vomiting is of little significance until the vomitus becomes fecal; then we are confronted with a much more serious condition. In these cases, the surgeon must be prepared to do an operation very simple, as the severing of adhesive bands, or a very extensive one—even a resection of a portion of the intestine with some form of an anastomosis. The postoperative care of these cases is of vital importance. The patients are usually much dehydrated. Personally, I have obtained the best results by the administration of a normal saline solution, or a solution of glucose and sodium bicarbonate, by the Murphy "drip" method per rectum, supplemented with gastric lavage two or three times a day.

Intussusception: The symptoms of this condition are a frequent desire to evacuate the bowels, pain, tenesmus, with the passage of small, bloody or mucus stools, vomiting, the development of a sausage-shaped swelling in the abdominal region, with the accumulation of a mass of soft feces. To await the classical symptom as given by the textbooks, the discharge of blood from the anus, is usually to defer the operation too late to accomplish the cure of the patient.

Rupture of the gallbladder is such a rare occurrence that I will mention it only as a possibility in an acute abdomen. Gangrene of the gallbladder develops very slowly and there is no need to be in a great hurry about operating. Gallstone colic, while very painful, is not an emergency operation. A cholecystotomy or cholecystectomy is not the simple operation that some would try to lead us to believe. I believe that every gallbladder case should be put in the best possible condition and well prepared before operating. Jaundice should be allowed to clear up, the coagulation of the blood should be determined, and calcium chloride should be administered to provide against hemorrhage. For several years the pendulum of surgical opinion has swung back and forth between the question of doing a cholecystectomy or a cholecystotomy. There is no question but that a cholecystectomy will give the best results where the walls of the gallbladder are much diseased and a so-called "strawberry gallbladder," or hydrops, is present; otherwise, a cholecystotomy will in most cases be as satisfactory with a lower mortality. The symptoms of gallbladder infection are fairly typical: indigestion (?), sour stomach, eructation of gas, pain, without reference to the time after the taking of food, often radiating to the right subscapular region or shoulder. Gallstone colic is

often followed by jaundice, and to operate at this time is a very hazardous undertaking.

Rupture of a fallopian tube in ectopic gestation: A woman, during the child-bearing period, giving a history of passing her menstrual period a few days or weeks, followed by a bloody, tarry discharge from the vagina, a sudden, sharp, cutting pain in the lower abdomen with a feeling of faintness and collapse, are strong subjective symptoms of a tubal rupture of ectopic gestation. On making a bimanual examination, finding the uterus enlarged, soft and boggy, a doughy mass low down in the pelvis corresponding to the site of the pelvic pain, and, under the microscope, shreds or a cast of decidua with no chorionic villi, the diagnosis is proven. As to the treatment, there is quite a difference of opinion among surgeons as to whether all should be operated upon immediately or deferred to await a more favorable time. But with an active hemorrhage, and the patient in fairly good condition, the sooner the operation the better. My own opinion is that the surgeon is justified in taking a desperate chance, as the patient is in a critical condition. The closer the rupture occurs to the uterus, the greater the hemorrhage. In many cases of tubular abortion, the product is walled off and is finally absorbed. Mesenteric thrombosis, hemorrhagic pancreatitis, and Meckel's diverticulitis are very rare, but their occurrence should be borne in mind.

Acute salpingitis: The symptoms of an acute salpingitis are well known, characterized by tenderness in the lower part of the abdomen, with rigidity the same on both sides because, as a rule, the disease is bilateral. The temperature is higher, the abdominal rigidity more diffuse, and the patient more acutely ill than in cases of appendicitis. Bimanual examination should aid us in the diagnosis. But what is not so well known is that these cases should not be operated upon during the acute stage, as the mortality of this type is very high. The outcome is not as good as when the operation is deferred until the disease becomes chronic.

Traumatic injuries due to external violence: Anatomically, the organs of the abdomen are divided into two classes: solid and hollow. In trauma of any of these organs with hemorrhage there will be tenderness and rigidity, but, on close observation when there is a rent in the liver, spleen or kidney, the rigidity will not be as great as in a perforation or rent of hollow viscera. Injuries to the kidneys usually require no operation, as they are so solidly situated that nature will control the hemorrhage. Injuries to the spleen and liver, with the symptoms of hemorrhage, require operative interference. Perforative injuries of the viscera or urinary bladder should be operated upon. Sometimes it is necessary to make an exploratory laparotomy before the diagnosis of the actual condition can be made. It would be better to do a needless laparotomy occasionally than to overlook some grave internal injury. A perinephritic and a pelvic abscess should be opened and drained as soon as diagnosed.

Acute indigestion: There is such a condition, but the name has been so grossly abused that, to be on the safe side, it is wise to prove that the condition is not due to some other serious acute abdominal disease.

In conclusion, allow me to urge a hearty cooperation between the general practitioner and the surgeon, the mutual exchange of opinions, the comparison of the preoperative diagnosis with the postoperative findings.

RELATION OF MUSICAL SOUNDS TO PHYSICAL DIAGNOSIS *

By FLEMING HOWELL, M.D.
Buckhannon, W. Va.

I will call attention to the subject of the relation of the pitch of musical sounds to physical diagnosis, and of the nature of musical sounds and ordinary sounds, in order that what I later say may be more clearly understood.

The history of music in the form of rhythmical divisions of time is older than civilization. The first musical instruments were of the percussion type. The clapping of hands and the stamping of feet in marked rhythm exemplified the first elements of music, and the family of drums, cymbals and bells was a development of the same principle, affording primitive peoples rhythmical accompaniment for the dance.

It is related that Pythagoras made the first discovery of the ratios of the perfect intervals by listening to some blacksmiths who struck the iron on their anvils with hammers of different weights and thus produced different notes from the metal; but the narrator of this tale disregarded the obvious fact, since established by experiment, that, save for slight variations due to greater or lesser heat of its different parts, a metallic bar, like a string, always sounds a note of the same pitch, whatever be the

* Read before the Central West Virginia Medical Society at Buckhannon, W. Va., on October 9, 1929.

weight of the instrument with which it is struck.

Previous to the time of Pythagoras music was cultivated, and, to a more or less degree, developed, in China, India, and Japan, and, subsequent to this time, throughout Grecian, Hebrew, and Roman times, but without a scientific basis having been discovered or established and with no very great employment of it except as a part of the religious worship of the different cults.

In the eleventh century, music first began to be made really popular by the Troubadors of France, the Mennesängers of Germany, and the Schalds of Scandinavia. These did much toward polishing and refining the manners and customs of mediæval Europe by displaying their music, crude as we imagine it was, in the courts and among the nobles. They accompanied the crusaders and flourished under the name of "minstrels" from about A. D. 1000 to 1300.

About the beginning of the eleventh century, however, there appeared an improvement that affected and put music on a scientific foundation—a foundation which, with very few refinements gradually added, has supported the noble and inspiring proportions it has since attained.

About the year 1012, Guido, of Arezzo, contrived a method of rendering and indicating the intonation of sounds by means of six notes distributed upon lines and spaces, and gave the names *ut*, *re*, *mi*, *fa*, *sol*, *la*, which he took from the first syllables of the words in the first stanza of the hymn sung on the day of Saint John the Baptist. Besides these notes, as he named them, he adopted seven letters, *a*, *b*, *c*, *d*, *e*, *f*, and *g*, to represent them; and because the letter *g* (*gamma*) represented the note *ut* in his system, the whole arrangement came to be called *gamut*, which is an abbreviation of *gamma ut*, the name it still bears.

To complete this ingenious monk's invention, Le Maire, in the same century, or about 1024, added a semi-tone and named it *si*, thus completing the *gamut* as we have it today. When we consider that this simple contrivance is based on exact science, that it has lasted unchanged for over seven hundred years, and that by its means musicians of different countries and languages can meet and understand each other's music; and when we realize that the world's inspiring music, symphonies, oratorios, concertos and hymns are recorded so that they may be perpetuated and reproduced by means of this simple scale, we can only wonder at the latitude, comprehensiveness and interrelation of all science and art.

The science of physical diagnosis is no exception to the rule of the interrelation and interdependence of all sciences. By the employment of the laws of sound (the laws of musical sound, let me say), in physical diagnosis we are able to determine and mark fine distinctions in pathological conditions and can record the actual conditions for future comparisons. These determinations that I am about to explain are absolutely accurate and reliable if the work is scientifically and accurately done, and we can watch the progress of the case, and of the diseased conditions, from time to time with absolute confidence that our conclusions are correct. This can not be done so promptly and accurately in any other way.

Musical sounds, as well as all other sounds, reach our ears through the air. This is proven by the fact that a sounding body placed in a space devoid of air, as under the receiver of an air pump, will not emit sound.

It will be sufficient for our purpose to admit that vibrations of the air transmit all sounds, musical sounds included, and through different media with substantially unchanged quality, even to great distances. All musical sounds, then, are produced by regular, periodic vibrations of some surface or body in contact with air, whereby motion or vibrations are imparted to the air and thus transmitted to the ear.

Experiments have demonstrated the following facts:

First, regular repetition is characteristic of those motions or vibrations which give rise to musical sounds.

Second, the pitch of a note or musical sound produced depends on the time in which the motions or vibrations take place, and is conveniently expressed by the number of times the motions or vibrations are repeated in a second of time.

Third, in C-natural, Helmholt's theoretical pitch, the number of vibrations per second of time is 528. The more rapidly the sonorous impulses strike the ear, the higher is the pitch of the sound produced or perceived. The lowest sound that is realy musical is produced by about 40 vibrations per second, while the auditive sensation of the highest is about 40,000 per second. But the sounds employed in music have a range of only about seven octaves, and extend from about 40 to 5,000 per second.

Some birds and animals seem to be able to hear and recognize sounds of more than 40,000 vibrations per second. I lately read of a police captain who had a whistle made of more than 40,000

vibrations per second, to which a police dog would instantly respond but which the thief could not hear.

It would be interesting to go much further into the science of musical sounds and their relation to the other sciences and arts, but for our present purpose this is sufficient. We propose to explain the practical use and application of a knowledge of the laws of musical sounds—of a knowledge of the pitch and tone of musical sounds to the subject of percussion and auscultation in physical diagnosis.

All the sounds we hear in nature—the voices of friends, the cries and the joyful shouts of children, the barking of dogs, the lowing of cattle, the songs of birds, the buzzing of insects—and the mechanical sounds, such as those of the steam whistle, of bells, of cathedral chimes, of chopping, hammering and pounding, all have pitch (musical pitch, we will say) which, under the same conditions, is always the same.

It might be well to explain that sounds may be divided into noises and musical tones or notes. In a mere noise there is no regularity of vibration, and irregularly lengthened and spaced sound waves are sent out; while a musical note always arises from a source that has regularity of vibration and sends out equally spaced sound waves into the air. Most of the sounds we hear, as many of those I have mentioned, when pure, including sounds produced by percussing the chest, have regularity of vibration and, therefore, regularity of pitch which can be indicated and expressed in terms of the musical scale.

We find pitch lowered in bodies accordingly as they approach from the solid to the hollow, or vesicular or cellular condition, or in a string or wire as it is longer or larger, or more or less tenuous.

The percussion note or pitch is higher over the shoulder, or thigh, or any other solid part of the body, than over the region of the lungs or abdominal cavity, because of the fact that the shoulder or the thigh, for instance, is solid, while the lungs are vesicular and the intestines in the abdominal cavity are more or less inflated with gas.

How are we going to apply this knowledge, which scientific investigation has demonstrated as being true, to the science and art of physical diagnosis? An explanation of this is the object of this paper.

The pitch of the percussion note (the musical note or tone, we will say) over the same portion of healthy lung is always practically the same over a period of time sufficiently extended to allow us to make such investigations and comparisons as may be required to arrive at a positive conclusion. There is always a sufficient portion of one or the other of the lungs, in such healthy or normal condition, as will afford us a standard of healthy lung for comparison in that particular case.

In the case of the consolidation of a portion of a lung, as in pneumonia or tuberculosis, or of effusion into a hollow cavity such as the pleural cavity or peritoneum, there is always elevated pitch, and this elevation of pitch is greater or less according to how nearly the condition approaches complete consolidation of the lung or as to how nearly effusion has compressed the lung or the abdominal viscera.

In the case of these consolidations or effusions, any one who has had even a moderate experience in percussion and auscultation will be able to determine that there is a difference in the pitch of the percussion note in the different regions. But is it higher or lower, and, if higher or lower, how much higher or lower?—and is it higher or lower than yesterday, or last week, or last month? Now, to know positively whether it is higher or lower tomorrow or next week or next month is to know positively whether the condition under observation is improving or growing worse. No one can carry the details of the pitch in his mind for even a day, much less for a week or for a month. There must be a method of recording these changes, and this can be done only by employing some standard of comparison. This standard of comparison must have the quality of maintaining constantly and permanently the same musical pitch or tone.

Such a convenient standard is the tuning-fork. The tuning-fork that I have employed throughout my practice is C-natural, or middle C, and, as a matter of interest, this vibrates 528 times per second of time. There are various pitches adapted to tuning-forks, giving the pitch in middle C, treble C, and in A, the leaders among which are: French pitch with 522 vibrations per second; Helmholt's theoretical pitch with 528 vibrations per second, and modern concert pitch, with 540 vibrations per second. Any of these may be adopted indifferently. It is only important that some fixed standard be adopted.

We learn to determine the correct pitch of the sounds we hear around us, including the percussion note or pitch, and correctly refer them to the musical scale in a shorter or longer time, according to whether we have a good or an indifferent ear for music. Any one of average musical knowledge and talent should, in a short time, acquire the ability to determine the pitch of the percussion note in any

particular case or condition and go to the piano and find the same note.

Personally, I have a very poor ear for music. I got my first suggestion of the application and use of the musical scale in physical diagnosis from my preceptor, the late Dr. Hugh W. Brock, of Morgantown, West Virginia. He would estimate the difference in pitch in the percussion sounds in physical diagnosis as being so many intervals of the musical scale, but he never conceived or contrived any means of recording these differences. I became interested in the subject and conceived that there should be a way in which these differences could be recorded. I secured a tuning-fork with the object of cultivating my ear, and from persistently practicing and estimating the differences of pitch in the different sounds, especially during my long professional trips into the country, I gradually grew more and more interested and proficient. It eventually dawned upon me that I could record these differences in pitch by means of the tuning-fork I had been using, and thus retain them to compare the condition on any one day with that of the next, or with that of the next week or next month.

I have attended clinical lectures upon diseases of the chest and have examined such works upon physical diagnosis as I could consult some years ago, and I found the subject referred to only by Professor Agnew, who said this: "To estimate the value of percussion and to understand its true significance, you must first learn to appreciate correctly the elements of sound." Later, he says: "Authors have a variety of terms for these sounds, such as clearness, dullness, emptiness, fullness, etc., but I think that a classification based upon analysis of the elements of sound in general will afford us the truest and most practical distinction, especially in estimating the sounds in thoracic percussion. These elements or acoustic properties of percussion sounds which concern us clinically are termed, respectively, *intensity*, *pitch*, *quality*, and *duration*, of which pitch ranks first in importance." These four elements he then takes up, and under the head of "Pitch" says only this: "The pitch of the percussion sound is always lower over healthy lung substance, and, as a rule, the greater the quantity of air contained in the corresponding tissue the lower the pitch." This does not indicate to us how to estimate the extent of the elevation or of the lowering of the pitch, or how to measure increased or lowered pitch. It is far from suggesting that there might be a way by which we could accurately measure variations in pitch and record them for future comparison, which is so important if we wish to be satisfied in our own minds that our conclusions are correct, and if we wish to do that justice to our patients that they have every right to expect and to demand.

In making a physical examination of the lungs in a suspected case of tuberculosis or pneumonia, for instance, after we have made the usual preliminary examination we carefully percuss over every portion of the chest. We will be able to find sufficient normal or healthy lung tissue to determine the normal percussion note in this particular case, which will be somewhere, say, near A, or two intervals below C of the musical scale. We will then assume A to be the standard percussion note for this particular case at this particular time, and this we will use for comparison. We find that over the apex of the left lung, for instance, the pitch is higher. We determine just what this increased pitch is by running up or down from C of the tuning-fork, and find that it corresponds to, say, D of the musical scale. It is, therefore, three musical intervals above the normal standard in this particular case, which we found to be A. We now record our case in our case book as follows: Percussion note E (or, abbreviated, P. N. E.).

In one, two or four weeks we repeat the examination in the same careful way and find that the percussion note over the affected area is two musical intervals higher than at the previous examination. It will therefore correspond to F of the musical scale. In other words, the consolidation has increased sufficiently to raise the percussion note two intervals of the musical scale and the condition is growing worse.

In another case with the same normal percussion note, by the same means, we find that within one, two or four weeks the percussion note over the affected area is two or three intervals lower, or corresponds to G of the musical scale. In these two cases we know positively that the first is growing worse and that the second is improving. This is just as absolutely and positively reliable as anything can be, and enables us to do the very best for our patients that can be done, whatever their fate may be.

It is not necessary for me to go further into the details of the procedure I have described and explained, as it applies to all diseases and conditions involving consolidations of portions of the lungs, or of effusions into the pleural or abdominal cavities. The experienced, and even the less experienced diagnostician, when he has acquired the principles of the method, can readily apply them to the different conditions.

THE MYSTERY OF THE VANISHING LADY

By ALEXANDER WOOLLCOTT

[EDITOR'S NOTE.—To explain why the JOURNAL is publishing "The Mystery of the Vanishing Lady," it would be necessary to destroy the thrill that lurks in the final paragraph. This rather amazing narrative has attracted nation-wide attention since it was first published in *The New Yorker* on July 6, 1929. It has one angle that should particularly interest the doctor of medicine. The story is reproduced in the JOURNAL with special permission from *The New Yorker*.]

Then there was the story—told me some years ago as a true copy of a leaf from the secret archives of the Paris police—of the woman who disappeared suddenly and completely during the World Exposition in Paris.

It happened in this way: An Englishwoman and her young, inexperienced daughter, a girl of 17 or thereabouts, had stopped off in Paris temporarily. The mother was the frail, pretty widow of an English officer who had been stationed in India, and the two had just come from Bombay, bound for home.

Paris was so tumultously crowded for the Exposition that they counted themselves fortunate to get a room at the Crillon. The girl was the more relieved that there would be no need of a house-to-house search for rooms, for the mother had seemed unendurably exhausted from the long train ride, and was now of such a color that the girl's first idea was to call the house physician, hoping fervently that he spoke English, for neither she nor her mother spoke any French at all.

The doctor, when he came—a dusty, smelly little man with a wrinkled face lost in a thicket of whiskers, and a reassuring Legion of Honor ribbon in the buttonhole of his lapel—did speak a little English. After a long, grave look and a few questions put to the tired woman on the bed, he called the girl into the sitting-room and told her frankly that her mother's condition was serious; that it was out of the question for them to think of going on to England next day; that on the morrow she might better be moved to a hospital, etc., etc.

All these things he would attend to. In the meantime he wanted the girl to go at once to his home and fetch him a bottle of medicine that his wife would give her. It could not be had quickly in any chemist's. Unfortunately, he lived on the other side of Paris and had no telephone, and with all Paris *en fête* it would be perilous to rely on any messenger. Indeed, it would be a saving of time and worry if she would go, armed with a note from him. In the lobby below, the manager of the hotel, after an excited colloquy with the doctor, took charge of her most sympathetically, himself putting her into a *sapin* and volubly directing the driver.

It was then that the girl's agony began, for the ramshackle victoria crawled through the festive streets. The house seemed to stand at the other end of the world, when the carriage came at last to a halt in front of it. The doctor's wife, after reading the note again and again, stationed the girl in an airless waiting room and left her there so long that she was weeping for very desperation before the medicine was found, wrapped, and turned over to her.

A hundred times during that wait she rose and started for the door, determined to stay no longer. A thousand times in the wretched weeks that followed she loathed herself for not having obeyed that impulse.

Then the snail's pace trip back to the Right Bank was another nightmare, and it ended only when, at the *cocher's* mulish determination to deliver her to some hotel in the Place Vendôme, she leaped to the street and in sheer terror appealed for help to a passing young man whose alien tweeds and boots told her he was a compatriot of hers.

He was still standing guard beside her five minutes later when, at last, she arrived at the desk of the Crillon and called for her key, only to have the very clerk who had handed her a pen to register with that morning look at her without recognition and blandly ask "Whom does Mademoiselle wish to see?" At that a cold fear clutched her heart, a sudden surrender to a panic that she had fought back as preposterous when it had visited her in the doctor's waiting room; a panic born when, after the doctor had casually told her he had no telephone, she had heard the fretful ringing of its bell on the other side of his walnut door. And now, here was this clerk looking at her as if she were some slightly demented creature demanding admission to some one else's apartment.

But, no, Mam'zelle must be mistaken. Did Mam'zelle say her room was No. 342? Ah, but 342 was occupied by M. Quelquechose. He had been occupying it these past two weeks and more. She demanded the registration slips, only to find that the one she herself had filled out was not among them. And even as the clerk now shuffled the papers before her eyes, the stupefying bloodstone which she had noticed on his ring-finger when he handed her the pen that morning winked at her confirmation.

From then on she came only upon closed doors. The same house physician who had hustled her off on her tragic wild-goose chase across Paris protested now, with all the shrugs and gestures of his people, that he had never so much as seen her before in his life. The same hotel manager who had helped her to the carriage flatly denied her now, though he courteously offered to provide another chamber where she might repose herself until such time as she could recollect at what hotel she really belonged, if—

For always there was in his ever polite voice the unspoken reservation that the whole mystery might be a thing of her own disordered invention. Then, and in the destroying days that followed, she was only too keenly aware that these evasive people—the personnel of the hotel, the attachés of the embassy, the reporters of the Paris *Herald*, the officials at the Sureté—were each and every one behaving as if she had lost her wits. Indeed, there were times when she felt that all Paris was rolling its eyes behind her back and significantly tapping its forehead.

Her only aid and comfort was the aforesaid Englishman, who elected to believe her against all the evidence which so impressed the rest of Paris. He proved a pillar of stubborn strength. His faith in her needed to be unreasoning because he began to suspect that, for some unimaginable reason, all these people were part of a plot to conceal the means whereby the missing woman's disappearance had been effected. This suspicion deepened when, after a day's delay, he succeeded in forcing an inspection of Room 342 and found that there was no detail of its furnishing which had not been altered from the one etched in the girl's memory.

It remained for him to prove the mechanism of that plot and to guess at its invisible motive—a motive strong enough to enlist all Paris in the silent obliteration of a woman of no importance, moreover, a woman who had not an enemy in the world. It was the purchased confession of one of the paperhangers, who had worked all night in hurriedly transforming Room 342, that started the unraveling of the mystery.

Perhaps you yourself have already surmised that the doctor had recognized the woman's ailment as a case of the black plague smuggled in from India; that his first instinctive step, designed only to give time for spiriting her out of the threatened hotel, had, when she died that afternoon, widened into a conspiracy on the part of the police to suppress, at all costs to this one girl, an obituary notice which, had it ever leaked out, would have emptied Paris overnight and spread ruin across a city that had gambled heavily on the great Exposition for which its gates were even then thrown wide.

Allonal and Amytal

"Allonal," according to a report of the Council on Pharmacy and Chemistry (*Journal A. M. A.*, June 12, 1926, p. 1853), is a preparation containing a combination of allylisopropylbarbituric acid and amidopyrine mixed with free allisopropylbarbituric acid and an excess of amidopyrine. "Amytal" is stated to be isoamyl-ethyl barbituric acid. The effects from the continuous use of either of these drugs in doses of two tablets daily can not be stated accurately in a few words, because the barbituric acid derivatives give rise to an extraordinary variety of symptoms under different conditions. It is possible that no ill effects would follow from such daily doses in a healthy adult in whom sleeplessness resulted solely from unusual cerebral activity, if the use were not too prolonged. At the other extreme, such doses taken continuously over a long period by an invalid suffering from a serious condition in which various other drugs were taken might lead eventually to the typical symptoms of barbital poisoning, with pneumonia and death. Neither Allonal nor Amytal stands accepted by the Council on Pharmacy and Chemistry.—*Journal A. M. A.*, May 25, 1929, p. 1783.

Treatment of Hemorrhoids

The injection treatment of hemorrhoids was so viciously exploited by quacks that it was frowned upon by most physicians. At present the method is used frequently by reputable proctologists. The English school has practiced the injection treatment with a 20 per cent solution of phenol in glycerin. J. Boas, in Germany, has reported 200 cases in which injections with alcohol were made. A solution of quinine hydrochloride and ethylurethane has its ardent advocates. The use of a dextrose solution, injected after a preliminary intradermal procaine hydrochloride injection, is the most painless and probably the safest procedure. In certain cases the injection treatment is inapplicable.—*Journal A. M. A.*, April 20, 1929, p. 1373.

AUTHORS' ABSTRACTS

Allergy in an Infant of Three Weeks

GEORGE M. LYON, M.D., Huntington, W. Va. (*American Journal of Diseases of Children*, November, 1928, pp. 1012-1016)—A case of severe angioneurotic edema in a breast-fed infant of three weeks is reported. The manner of detecting the allergen is described and the manner of treatment given. The interesting features of the case are summarized as follows:

1. The observation of the secretion of allergens in mother's breast milk with resulting allergic manifestations in an infant sensitive to those allergens.

2. The sensitivity in an infant and the lack of sensitivity in the mother as evidenced by the allergic reactions and protein skin tests. This is practically the rule and probably explains the occurrence of early acquired, so-called "inherited sensitivity."

3. The beneficial influence of epinephrine solution (1:1,000) on the condition when administered orally.

4. The sensitivity to white navy beans in the child after two years, showing there had not been complete desensitization.

5. The inability to demonstrate the secretion of allergens in the milk of a cow fed liberally on a diet containing white navy beans and corn.

6. A sequel to an incomplete diet, which has not previously been pointed out. The diet was incomplete mainly because of the poor geographic and poor economic surroundings of the family.

7. The fact that the child reacted to white navy beans, but was able to eat fresh string beans without allergic manifestations, suggested that there is a different protein structure or "body" in the two foods.

8. The use of epinephrine solution with the withdrawal of the offending proteins from the mother's diet gave the best therapeutic results.

9. The case is reported as being one of early acquired rather than inherited or congenital sensitivity.

Cytolysis in the Cerebrospinal Fluid in Acute Poliomyelitis

GEORGE M. LYON, M.D., Huntington, W. Va. (*American Journal of Diseases of Children*, July, 1928, pp. 40-53).—An attempt was made to study the effect of the lapse of time on the cell count of the cerebrospinal fluid in the pre-paralytic stage of acute poliomyelitic infection. The study yielded results that suggest the presence of some cytolytic factor particularly active toward the multilobed cells which had not been described previously.

The literature was reviewed and an effort made to explain why conflicting views were held regarding the advisability of immediate cell counts in all cases in which lumbar puncture is performed for diagnostic purposes.

Cytolysis was observed in the early pleocytoses of acute poliomyelitis, which was more active toward the multilobed elements than toward the mononuclear elements.

Proof was given of the advisability of making spinal fluid cell counts immediately after lumbar puncture in all cases in which there may be a possibility of poliomyelitis.

A pleocytosis consisting of 50 per cent or more of multilobed cells, occurring in a clear fluid, was said to be suggestive of acute poliomyelitic infection. When, in the course of from twenty-four to thirty-six hours or so, the lumbar puncture is repeated and there is a fall in the total cell count with a shifting of the differential count to a mononucleosis of 90 per cent or more, one may be certain that the condition is one of poliomyelitic infection. This cellular response is said to be pathognomonic, as it has not been observed in the spinal fluid in other conditions.

Adenocarcinomatosis in a Girl Aged Six Years

GEORGE M. LYON, M.D., and J. S. KLUMPP, M.D., Huntington, W. Va., and J. W. FERGUSON, M.D., of Kenova, W. Va. (*American Journal of Diseases of Children*, January, 1929, pp. 134-137).—A case of adenocarcinomatosis in a girl aged six years is reported. The clinical findings closely simulated tuberculous peritonitis. The intradermal tuberculin test (0.1 and 1.0 mgm. O. T.) proved negative. Mitotic figures were found in most of the cell obtained from the fluid removed by an abdominal tap. On this basis a tuberculous process was ruled out and a malignant process diagnosed preceding operation. The condition was progressively downhill, ending in death. Pathological sections of the tissue removed from the appendiceal region at the time of operation revealed adenocarcinoma of mixed and cuboidal cells.

TUBERCULOSIS ABSTRACTS

Acute Subapical Tuberculosis

Wessler, some years ago, pointed out in this country the frequency of the early appearance of a subapical infiltrative process, the gravity of which, as regards progressive disease, was quite clearly shown. More recently, certain German workers, notably Assman, Redeker, Rombberg, and Ulrici, have pointed out that much of the tuberculosis seen in adults is the result of a bronchogenic reinfection, either endogenous or exogenous, with a small tuberculous bronchopneumonic focus located anywhere in the lung, but most frequently in the infraclavicular region. This type of the disease comes on suddenly with symptoms that are grippe-like or catarrhal. Variations of this conception have been presented by different observers, but most of them agree that it is this infraclavicular infiltrative lesion and not the truly apical productive one, which is serious in terms of the development of progressive disease.

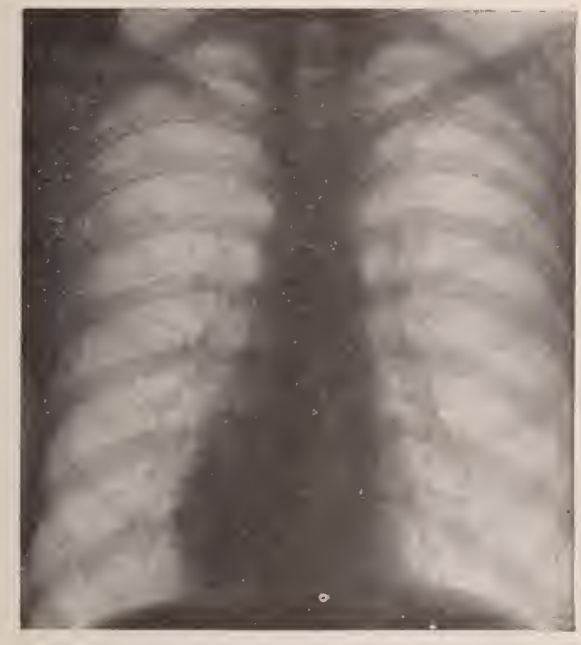


Fig. 1.—This rœntgenogram was obtained at a routine examination of employees. The patient at this time was in perfect health, and the rœntgenogram does not show any evidence of tuberculous involvement of the lung, and in particular no apical foci.

A study of the onset and type of lesion in two hundred cases has been made in an attempt to check the accuracy of the view that ascribes so much importance to the infraclavicular lesion.

Cavity formation was particularly observed as to the point of origin, migration, and especially the time of appearance in relation to onset. The rapidity of formation of cavities after onset, with the tendency to form in the subapical region and migrate upwards, was very striking. The x-ray was found to be the most useful in detecting the early development of the subapical lesion and bears out the value of using the x-ray as an adjunct to physical examination in every suspected chest condition.

Fig. 2.—The second rœntgenogram of the same patient was taken seventy-eight days later and ten days following the onset of an acute, grippe-like disease. It shows a rather extensive infiltrative lesion in the left infraclavicular region with beginning central excavation.

Tabulation of Facts Studied.—In these two hundred cases, a very careful history of the onset and course was taken, and every available x-ray of each case was studied. With this information tabulated, the following points stand out strikingly:

1. In pulmonary tuberculosis, sudden onset is not less frequent than is insidious onset.

2. Apical involvement is not characteristic of incipiency, but occurs in the majority of cases after the incipient stage has passed.

3. The extent of the lesion does not bear a direct relation to the duration of the disease. Of all patients reaching the far advanced stage, the majority do so within the first half year.

4. Cavitation is not a late occurrence; its frequency is nearly the same at any stage of the disease.

5. Apical involvement bears a close relation to the type of the clinical course.

6. An analysis of patients with pulmonary tuberculosis as to the two characteristics—"apices involved" and "type of onset"—leads to the differentiation of two different clinical types of disease. The one with apices free has a sudden onset with a bronchopneumonia (tuberculous) which usually progresses rapidly with acute exacerbations and the early development of advanced disease. The other type has an insidious onset, involves the apex primarily, and progresses very slowly, if at all.

Apical lesions as such are not always benign, as they often are the result of a spread upward from a subapical lesion; however, this study would indicate that true apical tuberculosis seldom progresses caudalward to extensive disease.

Summary of Conclusions.—1. Progressive and destructive pulmonary tuberculosis usually begins *suddenly*, with *exudative subapical* lesions.

2. Strictly apical productive tuberculosis is not, as a rule, the incipient stage of progressive and destructive pulmonary tuberculosis; it may precede the latter; but even in such cases, the latter starts usually as stated under 1. The rôle which apical tuberculosis plays in phthisiogenesis is rather insignificant as compared to that of acute subapical infiltrations.

3. Lesions far advanced as to extent, and excavations, frequently develop within less than six months.

4. Processes leading to active progression and to excavation are most frequently associated with acute symptoms.

5. Apical involvement, in the majority of patients, is not an occurrence of incipiency but a late development.

6. Diagnostic and therapeutic endeavors should be directed toward the acute subapical processes, and not only toward the insidious apical disease.

7. Physical signs and symptomatology, traditionally described as characteristic for "incipient pulmonary tuberculosis," are misleading for the detection of truly incipient subapical acute processes.—MAX PINNER, William H. Maybury Sanatorium, Detroit.

Sodiphene Not Acceptable for N. N. R.

The Council on Pharmacy and Chemistry reports that Sodiphene (Sodiphene Company, Kansas City, Mo.) is stated to have the following composition: "Phenol, 4 per cent; sodium hydroxide, 1 per cent; cassia oil, 0.01 per cent; witch hazel, 0.10 per cent; boric acid, 0.08 per cent; alcohol, 0.2 per cent, wintergreen oil, trace." The council finds that there is no evidence to indicate that, in the amounts present, the cassia oil, witch hazel, boric acid and alcohol have any therapeutic effect, and the cassia oil evidently acts as a flavor, only. The preparation must therefore be considered an alkaline phenol solution containing sodium phenolate rendered unscientific and needlessly complex by the addition of witch hazel and boric acid. Alkaline phenol solutions were in extensive use many years ago, but have been generally abandoned. The preparation, therefore, is not only unscientific but it also lacks novelty, and extensive use of similar preparations has failed to demonstrate the usefulness of alkaline phenol preparations. The council declared Sodiphene unacceptable for New and Non-official Remedies because it is an unscientific, needlessly complex mixture, marketed under a non-descriptive name, which presents no originality entitling it to a proprietary name and which is marketed without a statement of composition on the label and for which unwarranted claims are made.—*Journal A. M. A.*, August 3, 1929.

Use of Combination of Barbital and Amidopyrine

There seems to be no reason to doubt that a mixture composed of one of the analgesic drugs, such as amidopyrine, acetylsalicylic acid, acetanilid or acetphenetidin, and a hypnotic drug of the barbital type is more effective in relieving pain than is either of the components alone. This type of mixture was popularized, apparently, if not originated, by Von Noorden, who reported that a mixture containing 0.3 gm. of barbital, 0.25 gm. of acetphenetidin, and from 0.0025 to 0.03 gm. of codeine, was equal in effect to 0.6 gm. of barbital without the side action of the latter, but he did not present satisfactory evidence in support of that statement. At present there is a large number of proprietary remedies of this general type on the market. There has been apparently no satisfactory clinical comparison of the pain-relieving power of any of these preparations with that of the simple analgesics. A mixture of barbital and amidopyrine is probably as useful as any of the expensive proprietary preparations of this type. The action of the hypnotic may outlast that of the analgesic; hence they may be used separately, the analgesic being repeated more frequntly than the hypnotic.—*Journal A. M. A.*, August 31, 1929.

THE WEST VIRGINIA MEDICAL JOURNAL

JAMES R. BLOSS, EDITOR-IN-CHIEF . . HUNTINGTON

ASSOCIATE EDITORS

J. HOWARD ANDERSON, MARYTOWN — WALTER E. VEST, HUNTINGTON — C. A. RAY, CHARLESTON — HARRY M. HALL, WHEELING

THE JOURNAL issued on the first of each month. Entered as second-class matter January 1, 1926. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917. Authorized July 24, 1919.

Subscription to Members ..... $2.00 Per Year
Subscription to Non-Members ..... $3.50 Per Year
Single Copy ..... 50 Cents

OFFICERS

President:
H. M. HALL ..... Wheeling

First Vice-President:
B. F. BONE ..... Moundsville

Second Vice-President:
W. C. SWANN ..... Huntington

Third Vice-President:
J. A. DUFF ..... Martinsburg

Executive Secretary:
MR. JOE W. SAVAGE ..... Charleston

Treasurer:
T. MAXFIELD BARBER ..... Charleston

Delegates to A.M.A.:
JAMES R. BLOSS (1928-29) ..... Huntington
HENRI P. LINZ (1928) ..... Wheeling

Alternates:
A. A. SHAWKEY (1928-29) ..... Charleston
HARRY M. HALL (1928) ..... Wheeling

COUNCILLORS

Chairman of the Council for 1928:
R. H. DUNN ..... South Charleston

First District:
C. W. WADDELL (2-year term) ..... Fairmont
C. G. MORGAN (1-year term) ..... Moundsville

Second District:
C. H. MAXWELL (2-year term) ..... Morgantown
C. H. HALL (1-year term) ..... Elkins

Third District:
JOHN FOLK (2-year term) ..... Bridgeport
I. D. COLE (1-year term) ..... Clarksburg

Fourth District:
ROY BEN MILLER (2-year term) ..... Parkersburg
W. E. VEST (1-year term) ..... Huntington

Fifth District:
J. HOWARD ANDERSON (2-year term) ..... Marytown
H. G. STEELE (1-year term) ..... Bluefield

Sixth District:
R. H. DUNN (2-year term) ..... South Charleston
H. A. WALKUP (1-year term) ..... Mt. Hope

¶ All original articles for THE JOURNAL must be made to it exclusively. Communications and items of general interest to the profession are invited from all parts of the state. Notices of deaths, removals from the state, changes of location, etc., are requested.

¶ Our readers are requested to send marked copies of local newspapers containing matters of interest to members of the medical profession. Name of sender should be given.

CONTRIBUTIONS TYPEWRITTEN

¶ Contract with present printer specifies that all articles, communications, etc., MUST BE TYPED.

ADVERTISEMENTS

¶ Advertising forms will go to press not later than the tenth of each month. All advertisements must conform to the standard established by the Council of Pharmacy and Chemistry of the American Medical Association.

WOMAN'S AUXILIARY

Mrs. R. V. Shanklin, Gary ..... President
Mrs. T. H. Harris, Parkersburg ..... Vice-President
Mrs. W. C. Swann, Huntington ..... Secretary
Mrs. W. D. Simmons, Slab Fork ..... Treasurer

Councillors

Mrs. C. G. Morgan, Moundsville, first district; Mrs. Ralph Maxwell, Morgantown, second district; Mrs. H. D. Price, Parkersburg, third district; Mrs. J. R. Bloss, Huntington, fourth district; Mrs. A. G. Rutherford, Welch, fifth district; Mrs. E. S. Dupuy, Beckley, sixth district.

Delegates to Woman's Auxiliary of A. M. A.

Mrs. R. V. Shanklin, Gary; Mrs. B. S. Preston, Charleston. Alternates—Mrs. George Jeffers, Parkersburg; Mrs. W. B. Scherr, Morgantown.

STANDING COMMITTEES

Medical Defense Committee

C. G. Morgan, Moundsville, chairman; H. A. Walkup, Mt. Hope; H. G. Steele, Bluefield.

Committee on Scientific Work

O. B. Biern, Huntington, chairman; G. H. Barksdale, Charleston; A. G. Rutherford, Welch.

Public Policy and Legislative Committee

R. A. Ireland, Charleston, chairman; R. H. Walker, Charleston; James McClung, Richwood; C. R. Ogden, Clarksburg; D. A. MacGregor, Wheeling.

Committee on Medical Education

John N. Simpson, Morgantown, chairman; W. T. Henshaw, Charleston; W. S. Fulton, Wheeling.

Committee on Professional Relations

John R. Shultz, Charleston, chairman (5-year term); A. G. Rutherford, Welch (1-year term); W. R. Goff, Parkersburg (2-year term); Hugh G. Nicholson, Charleston (3-year term); E. P. Smith, Fairmont (4-year term).

Workmen's Compensation Committee

W. A. MacMillan, Charleston, chairman; C. A. Ray, Charleston; John E. Cannaday, Charleston.

Committee on Public Health

David Littlejohn, Charleston, chairman; John Thames, Charleston; Will McLain, Wheeling.

Surgical Section

Robert King Buford, Charleston, chairman; B. I. Golden, Elkins.

Eye, Ear, Nose and Throat Section

I. D. Cole, Clarksburg, chairman; C. C. Jarvis, Clarksburg.

Hospital Association Officers

R. A. Ireland, Charleston, president; J. S. Turk, Wheeling, president-elect; B. I. Golden, Elkins, first vice-president; W. E. Vest, Huntington, second vice-president; Mr. Joe W. Savage, Charleston, secretary-treasurer.

PRESIDENT'S PAGE

THE object of this page has been not to discuss the scientific side of medicine, which is done so well elsewhere and, as everybody knows, so much better than it could be here, but to suggest imperfectly the passing movements of the times as they affect the medical profession. It was the elder Hubbard who was wont to say in his *Philistine* that all he ever hoped to do was to make some one else think. Even if they disagreed and that disagreement shed more light on the subject at hand, he could rest as having accomplished quite a little although nobody followed his views at all.

So we call attention again to the question of psychiatry. New York City is to have a new $3,500,000 institution, with Dr. Menas S. Gregory as its active head. It will be a Bellevue organization and will have 600 beds in three units, and is expected to be the best of its kind in the world. The two most important phases will be a study of the criminal and the emphasizing of the care of the individual. This last object seems to us by far the most important. It strikes us as a matter of some concern and more regret that West Virginia medical men do not take up this very important branch of healing. You hear of no young men espousing it as a specialty. Most colleagues you talk to would feign pass it by, like the Levite, on the other side. To be sure, it is complex and baffling, and those who go into it can depend upon a certain amount of derision coming their way. Nevertheless, it is lucrative and has its preëminent rewards not obtained elsewhere. It is certainly the coming opportunity to men of judgment and experience, and requires a very adequate knowledge of general medicine, since its devotees must be able to separate those symptoms arising from the body or the organic with those issuing from the mind or functional. No small task.

The hesitancy of most of us in meeting such innovations as psychiatry probably explains our weaknesses in other directions. Medical men seem to wait on each other to make a novel gesture either in medicine or politics. The result is a dead center and nothing happens.

Probably all of us realize that the branch of science to which we belong is having the battle of its life to preserve its traditions. We have made no progress as yet in defining just which of our traditions—or all of them—are worth perpetuating. The spirit of the times comes up to us and asks, "Are you ready to report?" Of course, we are not quite ready. It goes on and the requirements are met by some active factor—often one not in sympathy with us. Lying on our desk is Lilly's Physicians' Bulletin No. 68, and on the envelope is this from Descartes: "If ever the human race is raised to its highest practicable level, intellectually, morally and physically, the science of medicine will perform that service."

Despite our lack of aggressiveness just now, we of this page have believed, still conceive, and always will maintain Descartes spoke the truth.

Harry M Hall

EDITORIAL

Election of Delegates

Quite a large number of county societies hold their annual elections during the month of December each year, so that the newly elected officials can be inducted into office with the first of the new year. It occasionally happens, when the new county officers are elected in December, that the election of delegates to the state meeting is overlooked.

The 1930 state meeting will be held at White Sulphur Springs on May 20–22, inclusive, and the purpose of this notice is to remind all of the county society secretaries that delegates to the White Sulphur meeting should be chosen along with the officers at their annual elections. As soon as the delegates are elected the names of the delegates and alternates should be sent in at once to the executive secretary.

Each county society is entitled to one delegate, who shall be the secretary of that society, and one additional delegate for every 25 members or fraction thereof above ten members.

Films Available for County Meetings

The American College of Surgeons, through the Eastman Teaching Films, Inc., of Rochester, New York, has just announced the release, for rental purposes, of a number of scientific medical films. All of the films can be rented at a very small cost, the prices ranging from $3.75 to $20 for one showing. The release of these films for rental purposes will perhaps interest a number of county societies on the lookout for program material.

Among the films that can be rented are the following:

Infections of the Hand (3 reels).
Intestinal Peristalsis (1 reel).
Simple Goiter (1 reel).
Benign Prostatic Hypertrophy (1 reel).
Indirect Inguinal Hernia (3 reels).
Indirect Inguinal Hernia (2 reels).
The Technique of Blood Transfusion (2 reels).
Rabies (1 reel).
Ectopic Heart (1 reel).

All of these films can be rented in either 16- or 35-millimeter size, although the 35 millimeter films are somewhat higher in cost. They can also be purchased outright at costs ranging from $25 to $125. Any county society interested in any of the above films can procure further information by writing the state headquarters in Charleston.

COMMUNICATIONS

Charleston, W. Va.,
October 8, 1929.

WEST VIRGINIA MEDICAL ASSOCIATION,
Charleston, West Virginia.

Gentlemen:

At various intervals this office has been asked if one W. B. Hite is licensed to practice medicine in West Virginia. This is authoritative notice that he has never received license by either examination or reciprocity.

Whenever this office learns that he has located at any point, immediate steps are taken to advise legal authorities and the offender has been kept on the move just as fast as his whereabouts have been ascertained.

There is no need for an unlicensed practitioner anywhere in West Virginia. I will appreciate it as a personal favor if you will print this letter in the next issue of the Journal of the West Virginia State Medical Association.

Sincerely yours,
W. T. HENSHAW,
State Health Commissioner.

ANNOUNCEMENTS

College of Physicians

The fourteenth annual clinical session of the American College of Physicians will be held at Minneapolis, Minn., on February 10–14, 1930, according to an announcement just received from the executive offices in Philadelphia. Headquarters for the session will be at the Minneapolis Municipal Auditorium.

U. S. Pharmacopeia

A questionnaire concerning the extent of use of former U. S. pharmacopeial drugs, chemicals and preparations has recently been prepared by the committee on revision, and copies of the questionnaire will be sent to any doctor who is interested. The questionnaire was suggested as a check upon the decisions of the past twenty years. Any doctor who wishes to secure a copy of the questionnaire should communicate with E. Fullerton Cook, 636 South Franklin Avenue, Philadelphia, who is chairman of the committee on revision.

Scientific Films Available

County societies interested in securing films to show at coming meetings should get in touch with the executive secretary at once. In addition to the Stuckert film on obstetrics, which is furnished by the state association through the courtesy of the state health department, there are a number of other scientific films covering various phases of medicine now ready for release. A list of these films, which can be rented at a nominal figure, can be secured from the state secretary. The Stuckert film can be had free of charge.

Dr. Allemann Resigns

Dr. Albert Allemann, of Washington, D. C., has announced his resignation as editor of the *Medical Interpreter*. In a recent notice sent to the JOURNAL by Dr. Allemann, he states: "I wish to inform the subscribers to the *Medical Interpreter* that I resigned as editor of this publication in December, 1928, and that I am no longer responsible in any manner for the actions of its promoters."

OBITUARY

Dr. W. W. Golden

Dr. William Wolfe Golden, one of West Virginia's most prominent surgeons and superintendent of the Davis Memorial Hospital at Elkins, died suddenly following a heart attack shortly before noon on October 14. He was in his private office at the hospital when he was stricken, and was dead before he could be reached by other members of the hospital staff. Dr. Golden was 63 years of age at the time of his death, and had spent 37 years in the practice of medicine in West Virginia.

The deceased was born in Russia in 1866, where he received his early education. When still a young man he came to the United States and settled in New York City, where he continued his education at the medical department of New York University. He completed his medical studies in 1892 and the same year moved to Elkins, where he entered into the private practice of medicine. In October, 1903, the Davis Memorial Hospital was established and Dr. Golden accepted the position as superintendent, which he held until his death.

Dr. Golden's medical record was one of distinction. After receiving his degree from New York University, he entered this state and soon was widely known throughout the central part of West Virginia. In 1902 he was elected secretary of the West Virginia State Medical Association and served in that capacity for five years. At the Huntington meeting in 1907 Dr. Golden was elected to the presidency of the association. He was

DR. W. W. GOLDEN.

a member of the American Medical Association and a Fellow of the American College of Surgeons. He also served for several years as president of the West Virginia Public Health Council.

Dr. Golden was married to Miss Sarah Sloane, of New York City, in 1891, and his wife and two children, Dr. B. I. Golden of Elkins and Mrs. Helen Paulson of Baltimore, survive. He was a member and past master of Elkins Lodge No. 108, Ancient, Free and Accepted Masons, a member of the Scottish Rite bodies, a thirty-second degree Mason, and a member of the Shrine. He was also a member of the Odd Fellows and of the Elkins Rotary Club.

Funeral services for Dr. Golden were held at the family residence in Elkins on October 17 and the body was taken to Baltimore on a special train, where interment was made the next day.

The death of Dr. Golden marks the passing of another member of the old school of physicians, a school that grew up with West Virginia and a

school whose members practiced their chosen professions in the isolated mountain sections of the state. Dr. Golden walked down the path of progress with his adopted city of Elkins and lived to see the happy results of his pioneer work in the field of scientific medicine. His death came as a sad blow to his hundreds of friends in the profession throughout the state. Another leader of men has finished the long march through the pages of our state's medical history, leaving behind him a brilliant trail blazed with the achievements of success.

COUNTY SOCIETY NEWS

Mason County

The first scientific meeting of the Mason County Medical Society, which was organized last July, was held at the Hotel Lowe in Point Pleasant on the evening of October 1. The meeting was preceded by a banquet served at the hotel, after which the members adjourned to the ballroom for the scientific program. Dr. C. W. Petty, of Hartford, president, presided.

The scientific program was opened with a number of interesting case reports which were taken up for discussion. Dr. Walter E. Vest, of Huntington, president-elect of the state association, then presented a paper on "Artificial Pneumothorax," which was discussed by the members present. The meeting was concluded with the showing of the Stuckert obstetrical film, furnished through the courtesy of the state health department and the state medical association.

Members present were: Dr. Petty of Hartford, Dr. H. F. Bryant of New Haven, and Drs. H. A. Barbee, U. G. Arnett, J. N. Fadley, E. L. McElfresh, and R. W. Sayre, of Point Pleasant. Visitors included Dr. Vest of Huntington, Dr. C. E. Holzer of Gallipolis, Ohio, Dr. Worthy Withers of Gallipolis Ferry, and Mr. Joe W. Savage, state secretary.

H. A. BARBEE, Secretary.

Mercer County

The Mercer County Medical Society held its regular monthly meeting in the directors' room of the Municipal Building, Bluefield, on the evening of September 26, with Dr. B. S. Clements, president, presiding. After minutes of the previous meeting were read and approved, the secretary asked permission to hold monthly meetings of the society for the remainder of this year, which permission was granted. The society also admitted Dr. Ward Wylie, of Princeton, to membership, and accepted the transfer of Dr. John I. Markell from Kanawha county.

The scientific program was opened by Dr. J. Francke Fox, of Bluefield, who read a very instructive paper on his own experience with compound fractures. One valuable point brought out by Dr. Fox in his paper concerned the free use of tincture of iodine in and about compound fractures. He advocated the free injection of iodine into the wound.

Dr. Dean L. Hosmer, an interne at the Bluefield Sanitarium, read the histories and showed the x-ray films of two fractures. One was a fracture above and in the ankle joint, while the other was a fracture of the tibia. In the former, an eight-inch spike was driven through one or two of the bones in the foot to hold them in place while the plaster cast was put on. This spike was removed in five days. In the latter a mole-skin was used in holding the fractured ends in apposition.

Under discussion, Dr. W. H. Wallingford of Princeton was represented by Dr. John I. Markell, formerly of Charleston. He said: "Oftentimes, in case of accident, the patients are sent to the hospitals too soon. Treatment of shock in many cases should be performed at or near where the accident happened." He related an incident wherein a bridge fell near Charleston and some of the people thereon were injured. The ones treated nearby and allowed to remain in the vicinity until the next morning recovered better than the ones who were rushed to the hospital immediately. He spoke of temporary closures of the wounds, in an accident of this kind, to prevent more infection from getting into the wound, which Dr. Fox objected to quite severely.

Dr. Steele asked Dr. Fox what he thought of the comparison of mercurochrome with tincture of iodine in treatment of compound fractures. He asked Dr. Fox to tell how they used to put up fractures in the early days, and also the reason for removing the eight-inch spike from the fracture of the foot in five days, before there was any chance for the bone to unite. In replying to these questions Dr. Fox said: "I do not trust mercurochrome in compound fractures, and believe tincture of iodine has a selective effect on bones." He removed the spike in five days, he said, because the bones could not well get out of place inside of the plaster cast. He left the treatment of fractures in olden times to some future date. He advised the immediate setting

of fractures, when possible. He also said that he did not believe in closing a compound fracture.

Those present at the meeting were: Drs. J. B. Kirk, C. T. St. Clair, A. H. Wood, F. S. Richmond, S. J. Kell, W. C. Slusher, R. R. Stuart, M. W. Sinclair, W. H. St. Clair, R. O. Rogers, Fred Holroyd, J. Francke Fox, E. M. Tanner, B. S. Clements, H. G. Steele, F. J. Collison, P. R. Fox, and John McGuire. Visiting doctors were Drs. Dean L. Hosmer and B. L. Bradley, of Bluefield, and Drs. John I. Markell and Ward Wylie, of Princeton.

H. G. STEELE, Secretary.

Parkersburg Academy

One of the largest meetings of the Academy of Medicine of Parkersburg held in a long time took place at the Country Club on the evening of October 3. A banquet and business meeting were held at the club prior to the scientific program.

The scientific program consisted of the showing of the Stuckert film on obstetrics, which was furnished by the state association through the courtesy of the state health department. The film, which was made at the Jefferson Medical College in Philadelphia, consisted of six reels and more than an hour was required to show it. In addition to the members of the society who were present, approximately seventy-five Parkersburg nurses were in attendance. The film was shown by Mr. Joe W. Savage, executive secretary of the state association, who was the guest of the society.

J. T. GOFF, Secretary.

Marion County

The regular monthly meeting of the Marion County Medical Society was held in Fairmont on the evening of September 24, with Dr. Emil Novak, of Baltimore, as the scientific essayist of the program. Dr. Novak presented a most interesting paper on the subject, "Ovarian Dysfunction and Uterine Cancer as the Cause of Pre-Menstrual Bleeding," which was illustrated with lantern slides.

The meeting was held in the Fairmont Y. M. C. A. building and the scientific program was preceded by a banquet there. The Marion county society was happy to have twenty members of the Monongalia County Medical Society in attendance at its meeting.

PHILIP JOHNSON, Secretary.

Central West Virginia

The fall meeting of the Central West Virginia Medical Society was held in the Rotary Club rooms at Buckhannon on the evening of October 9, 1929, with approximately twenty members and guests in attendance. The scientific program was preceded by an elaborate banquet, served in the Rotary dining-room to the assembled guests.

Dr. Robert King Buford, of Charleston, opened the scientific program with a paper on "Treatment of Pelvic Infection," which was discussed extensively by the members present. Dr. Buford was followed by Dr. Fleming Howell, of Buckhannon, who read a most unusual paper on "The Relation of Musical Sounds to Physical Diagnosis." Mr. Joe W. Savage, executive secretary of the state association, was present and exhibited the Stuckert film on obstetrics, which was furnished by the association through the courtesy of the state health department. Mr. Savage also made a short talk on the work of the association throughout the state.

The annual election of officers was held at this meeting, and Dr. J. A. Rusmisel, of Buckhannon, was elected as president to serve during the coming year. Dr. W. H. Gum, of Hedgesville, was elected vice-president, and Dr. C. C. Carson, of Gassaway, was elected secretary-treasurer. Dr. Carson and Dr. L. W. Page, of Buckhannon, were elected as delegates to the state meeting at White Sulphur Springs in 1930. Dr. M. T. Morrison, of Sutton, and Dr. Gum were selected as alternates.

The next meeting of the society will be held in Sutton next January, and Dr. C. C. Carson was placed in charge of arrangements and program for this session.

S. S. HALL, Secretary.

Ohio County

The regular meeting of the Ohio County Medical Society was held in the Wheeling Elks' Club at 8:30 o'clock on the evening of October 14. The speaker of the evening was Dr. Dean Lewis, surgeon-in-chief of Johns Hopkins Hospital, Baltimore, who gave a most interesting paper on "Surgery of the Spleen." Discussion of the paper was opened by Dr. W. S. Fulton, Dr. E. M. Phillips, and Dr. R. U. Drinkard. It was originally planned to have Dr. Lewis conduct a clinic at the Ohio Valley General Hospital on the morning of his visit, but the society was forced to cancel this clinic when it was found that Dr. Lewis would be unable to attend.

In an effort to provide programs of interest to all members of the Ohio County Medical Society, the officers of the society recently sent out questionnaires to the members to determine what class of programs was the best received. The questionnaire asked whether or not more or fewer buffet lunches were desired, and whether or not more local members were desired on the programs. The questionnaire also provided space for the names of both local and non-local doctors who were desired for future programs.

H. W. BOND, Secretary.

Monongalia County

The regular monthly meeting of the Monongalia County Medical Society was held at 8:30 o'clock on the evening of October 8 in the junior high school library at Morgantown. There was a good attendance at this meeting, and the scientific essayist of the evening was Dr. Kenneth M. Day, of Pittsburgh. Dr. Day presented a most interesting paper on "Chronic Suppuration of the Middle Ear," which present.

G. R. MAXWELL, Secretary.

Fayette County

The regular monthly meeting of the Fayette County Medical Society was held at the Hill Hotel at Oak Hill on the evening of October 8, 1929. Dr. E. E. Jones, of Mt. Hope, read a paper on Uterine Hemorrhage, and Dr. C. L. Woodbridge, of Montgomery, read a paper on Blood Transfusion. Both papers were discussed by members of the society present.

The Stuckert film on obstetrics, which was scheduled to be shown by Mr. Joe W. Savage, state secretary, was postponed because of the illness of Mr. Savage. There were eighteen members of the society present, and one guest, Dr. D. O. Nichols of Slab Fork.

H. A. WALKUP, Secretary.

Kanawha County

The October 1 meeting of the Kanawha Medical Society was held in the auditorium of the Public Library building, Charleston, with Dr. Edgar Friedenwald, of Baltimore, as the scientific essayist of the evening. Dr. Friedenwald presented a most interesting paper on the subject, "Phases of Infant Feeding." The discussion was opened by Dr. A. A. Shawkey and Dr. T. M. Barber. Approximately sixty doctors were in attendance at this meeting.

The October 15 meeting was held in the Public Library building auditorium, when a highly interesting symposium on tuberculosis was presented. Dr. Everett E. Watson, of Mount Regis Sanatorium, Salem, Virginia, opened the scientific program with a paper on "Non-Tuberculous Suppurative Pulmonary Lesions." He was followed by Dr. George F. Evans, of the state tuberculosis sanitarium at Hopemont, who gave a paper on "Recent Advances in Treatment of Tuberculosis." Discussion on the two papers, which was extensive, was opened by Dr. J. G. Pettit, of Hopemont, and Dr. G. H. Barksdale, of Charleston.

RUSSEL KESSEL, Secretary.

Marshall County

The October meeting of the Marshall County Medical Society was held on the evening of October 8 at the Merry Tavern, Moundsville, with an excellent attendance. The meeting was in the nature of an old-fashioned reunion and dinner was served to the members and guests at six o'clock in the evening. Following the dinner, the scientific program was furnished by Dr. John Rankin, of Wheeling, who told about his recent post-graduate work in Germany and gave his observations of European clinics. This was a fine meeting and was greatly enjoyed by all those in attendance.

D. B. EALY, Secretary.

CURRENT COMMENT

The General Practitioner

The lament over the apparent passing of the general practitioner is a familiar chant in the field of medicine. Both the lay publications and the scientific journals take time out once or twice a year to mourn the loss of the old family doctor. In the midst of all this appears an editorial in the *Wisconsin Medical Journal* with an entirely new viewpoint. The general practitioners are flourishing instead of dying out, states the Wisconsin journal, and the editorial rejoices in the supply of and demand for family physicians. The article reads, in part:

"With the ever-changing standards of medical practice and the rapid metamorphosis in social and community life, both the medical press and lay magazines are constantly lamenting or condoning the disappearance from our midst of the old-time general practitioner, that self-effacing, untiring family physician, counselor and friend; the man who helped us into the world, nursed us through the

contagious diseases, set our broken bones and sewed up our heads, gave us his blessing when we were married and mayhap was still active and alert when the next generation arrived.

This type of practitioner, we are told, has gone and the surgeon, the obstetrician, the gynecologist, the eye, ear, nose and throat man, and a host of others have supplanted him; not to mention that specialty which is the ambition of many a tired saint in medicine, the skin man, described as the one who never kills, never cures, and is never called out at night.

Now, who is it that inspires this lament for the dead? It is the city dweller and the specialist himself. Are there not still practicing, in this broad land, 50,000 rural physicians? Is their opportunity less than it was a generation ago? Is their field of usefulness greatly changed? Only its dimensions. The automobile enables him to cover five times the territory and do five times the amount of work and receive five times as much for it.

To be sure, in particular cases, the automobile at some seasons of the year enables him to rush his patient to a hospital or obtain the skilled help that formerly was impossible; but there are still left to his skill and judgment whole families to watch over, to learn to know and to love. There are hundreds of communities in need of the old-type general practitioner—wiser, yes—better equipped, yes; far better—with a wider vision of the newer preventive medicine and health prevention.

Many of us haven't made the adjustment; we are too old. Let the young man step in. The harvest will be rich and the rewards great to him who wavers not in his fealty to the ideals of the profession or him who "follows the gleam."

The Life Span Problem

During the past two months a number of the medical journals in this country have carried articles and editorials concerning the claim of Professor C. H. Forsyth, of Dartmouth College, that the average length of life is declining. Professor Forsyth contends that, while science has managed to minimize juvenile mortality and infant mortality, the odds are decidedly against the American adult of today living as long as did his father or grandfather.

Says Professor Forsyth: "The expectation of life from age forty-five or fifty on is the lowest of which we have any record—far lower than it was even forty years ago—and it is still going down, not up. With all the improvement in the world at the early ages, the present downward trend at the advanced ages, if unchecked, will continue to dominate and produce a greater and greater net decline in the average length of human life."

Now comes a new champion in the person of Eugene Lyman Fisk, M.D., medical director of the Life Extension Institute, who is somewhat more optimistic than the Dartmouth professor. Dr. Fisk recently had published, in the *Review of Reviews* (August, 1929), a highly interesting article under the title, "How Long Will You Live?" Dr. Fisk believes it will be quite some time. He rolls up his sleeves and dives into the subject with a little more thoroughness than Professor Forsyth exhibited, and he gives due consideration to the advances made in reducing infantile and juvenile mortality.

Dr. Fisk concludes his article with the following observations:

"Dr. Louis I. Dublin, the life-insurance statistician, has shown that, if the favorable death rate now prevailing among certain classes and in certain communities could be generally maintained, human life could be extended about ten years beyond the present average lifetime. Excellent proof is found in the records of a group of policyholders taking the periodic health examination offered by a certain large life insurance company. On the whole group, a reduction of 18 per cent in the mortality rate among those examined was found over a period of ten years. Among those between 50 and 60 years of age there was a reduction of 53 per cent in the mortality rate as compared to policyholders of the same class who were not periodically examined and counseled as to their health needs.

"It is disease, not old age, that causes death. And the lives of such men as Oliver Wendell Holmes (88 years old), Robert Dollar (85), Thomas A. Edison (82), Elihu Root (84), George F. Baker (89), and John D. Rockefeller (90) prove that man's lifetime is not fixed at threescore years and ten.

"That they may have life and have it more abundantly" is a message as much needed today as it was in the days of Christ. For it is disease—mental or physical—that causes unhappiness. The philosopher, Schopenhauer, gave us a key to the situation:

"With health, everything is a source of pleasure, without it, nothing else, whatever it may be, is enjoyable. It follows that the greatest of follies is to sacrifice health for any other kind of happiness, whatever it may be, for gain, advancement, learn-

ing, or fame, let alone, then, for fleeting sensual pleasures."

Nostrums in New Orleans

The nostrum vendors in New Orleans seem to be making a living, according to a recent editorial in the *New Orleans Medical and Surgical Journal.* The editorial takes up some of the quackeries that are advertised day after day in the New Orleans newspapers, with the apparent purpose of calling an unhealthy situation to the attention of the doctors of Louisiana. The situation in New Orleans is "played up" only as an every-day occurrence, and it is a safe bet that every other city in the United States has a situation equally as odious. The editorial from the New Orleans journal reads in part:

"A rather cursory glance at the evening papers, as they now are appearing in the city of New Orleans, shows that they contain a considerable number of advertisements of patent and proprietary medicines. A more detailed investigation proves that not only are there many of these advertisements, but also that some of the most blatant and outrageous announcements of secret nostrums are appearing daily, or almost daily. In the pages of these presumed reputable papers are found such advertisements as S. S. S., originally put on the market as a cure of syphilis, but now toned down to a cure of the external manifestations of blood disorders. Wine of Cardui, which at one time was supposed to do anything and everything for the ailing woman, is of course represented. This alcoholic preparation of unknown ingredients is certainly a good pickup and substitute for the old-fashioned pre-Volstead liquor, but as a cure-all for women's complaints is valueless. Ironized Yeast, whatever that may be, is guaranteed to build up the weight in a few weeks or you pay nothing, according to the advertisement. Hay fever is relieved with Dr. Platt's Rinex or the money is returned. In conjunction with the frequency with which patent medicines are wont to offer to return the money if the goods are not what they are described to be, one wonders how legitimate manufacturing concerns would succeed if they did not have more faith in their products than do these quacks. Black Draught, C 2223, 666, Andes, not to forget Carter's Little Liver Pills or the more modern Calotabs, offer further advertisement relief to the sufferer who is willing to put into his stomach drugs of unknown quantity, quality and potency, if any of these preparations are potent, but who would no more think of buying a watch or an automobile without fairly thorough investigation than he would try to fly to the moon.

"It is not only the poor and the ignorant who suffer as a result of taking patent medicines of unknown substances for undiagnosed diseases, but it is also the man of presumed intelligence who reads and believes. The most ethical of the newspaper profession appreciate that they have a duty to protect their readers. Sad to relate, the high standard of the average professional newspaper man is often nullified by the action of those who are connected with the business side of the paper. It does not seem too much to ask, however, of the business individual that he should be governed by the same high standards that professional men are wont to observe."

The Machine Age

The *Ohio State Medical Journal* is unquestionably one of the most enterprising state medical publications in this country today. The editorial board of the Ohio journal tackles the problems of medicine in a bold, straightforward manner, and the board does considerable research to gather the facts and figures in support of its position. Elsewhere in this issue appears a translation by Dr. L. L. Bigelow, of Columus, a former president of the Ohio State Medical Association, from an article in *Le Presse Medicale*, showing comparisons and counter-distinctions between socialized medicine and state medicine. The following editorial takes up another major problem of medical economics in a most thorough and effective way:

"The annual cost to the American people due to illness and death arising out of the development of the so-called 'machine age' has been estimated at the tremendous sum of ten billions of dollars. This estimate is about ten per cent of the entire annual national income. It is further stated that these figures do not include loss attributable to death by violent accidents, but represent the loss through impaired health and ultimate demise chargeable to the highly developed state of industrial organization.

"These estimates, through the Bureau of Labor Statistics of the Federal Department of Labor, are based on studies made under the direction of Dr. Emery R. Hayhurst, who has been prominently identified with the Ohio State Department of Health and the Ohio State University for a number of years.

"It is indicated that the study relates especially to those physical disabilities commonly known as from regular employment. These data estimate that occupational diseases, other than accidents arising

there is an annual direct cash loss of $2,000,000,000 through incapacity for wage earning, based on actuarial figures of potential earning power, life expectancy, etc. It is further estimated that the money loss caused by premature death due to these occupational diseases amounts to $6,000,000,000 a year, and that the cost of medical, hospital and similar services amount to a yearly total of $2,000,000,000.

"Through economic and governmental policy incorporated in state workmen's compensation statutes, such as that in effect in Ohio, whereby proportionate compensation is allowed for physical disabilities incurred directly through hazards of employment, some of the social and economic problems involved in the machine age have been or are being met. In this state, for example, in addition to compensation for definite industrial accidents, there are listed in the statutes eighteen processes or occupational diseases which are now compensable in this state if incurred in employment. (Revised Occupational Disease Code in Ohio—see page 657 of August, 1929, *Journal*).

"Those representing labor and some of the social welfare workers have from time to time advocated a blanket type of enactment which would provide compensation for any and all types of disability arising from employment. The difficulty from such a proposal would, of course, develop from the possibility of claims for compensation, as well as medical and hospital care, for physical disabilities of all those employed, even when the source of disability might not be definitely ascertainable, thus, in effect, setting up a system of state medicine and state compensation for unemployment.

"In view of the fact that the workmen's compensation principle has been so widely adopted as an economic, social and governmental principle, it is, of course, consistent and inevitable that those disabilities *definitely* known to arise from employment be included in the compensation policy.

"One writer, in commenting on the estimates made by the Bureau of Labor Statistics, points out that all of the estimated loss can not be blamed purely on the machine age, but that the great industrial development of recent years has magnified the problem. As also pointed out by that commentary: 'The interests of the workers are not being neglected. Both national and state agencies are studying all branches of the problem of occupational diseases and a maximum of correction with a minimum of prohibitory law is expected to be the outcome.'

"The Division of Safety and Hygiene of the Ohio Industrial Commission, health officials, safety engineers, industrial physicians, the medical profession generally, and others are alert to this situation, and there is a common and determined effort, in as far as humanly possible, to establish preventive measures against industrial hazards, including accidents and diseases.

"The figures and estimates referred to are of considerable interest, especially when the great progress in preventive medicine is taken into consideration. In spite of the problems arising from new processes in industry and the other hazards from congested and complicated social life, the life expectancy of the average individual has been increased approximately a score of years in the past half-century, through the elimination of many disease hazards and the application of sanitary science, preventive medicine, and improved methods of treatment. Incidentally in point, in this whole problem was a cartoon in a recent issue of the *Ohio State Journal* following the disaster to the T. A. T. passenger airship in New Mexico. The text of that cartoon, which was strikingly illustrated, was labeled, 'Aggressive, Persistent, Invincible Man,' and it was shown that 'Accidents haven't stopped the railroad. Accidents haven't stopped the steamship. Accidents haven't stopped the auto and the motor bus. Accidents will not stop the airplane.'

"Whether or not the estimates and figures from the federal department will be used as arguments for further paternalism and state insurance, including unemployment insurance, old age pensions and health insurance, is yet to be seen.

"Perhaps of some significance in this connection is a summary of state medicine systems in foreign countries, issued some time ago by the Bureau of Labor Statutes and published elsewhere in this issue of The Journal.

"It would seem that modern life must, unavoidably, involve many risks, and that the American principle of initiative, personal responsibility and commensurate rewards for varying abilities, risks and responsibilities will prevail. Otherwise, an extension of communistic policy may inevitably lead to retrogression rather than progress of the 'machine age'."

BOOK REVIEWS

Tularemia

Paul B. Hoeber, Inc., of New York, has just issued a new volume on "Tularemia," by Dr. Walter M. Simpson, director of the diagnostic lab-

oratories of the Miami Valley Hospital, Dayton, Ohio, and dealing with history, pathology, diagnosis, and treatment. The book, which sells for five dollars, consists of 162 pages with 53 text illustrations and two colored plates. The foreword is written by Dr. Edward Francis, surgeon of the United States Public Health Service, who briefly outlines the history and spread of the disease.

Dr. Francis writers: "Simpson, by the employment of agglutination in conjunction with clinical evidence in 51 cases, reported in June, 1928, a continuous record of unrecognized existence of tularemia in Dayton, Ohio, throughout the preceding twenty years. Simpson's pursuit of his subject is a model. Within the pages of his book he states the story of tularemia in a clear, complete and authoritative manner."

Up to 1924 only 15 cases of tularemia had been reported in human beings. During the past four years over 800 cases have been recognized in the United States. During the past 18 months Dr. Simpson has discovered 61 cases in Dayton, Ohio. These experiences lead to the conclusion that tularemia is a widespread and common disease of man and that it is frequently confused with other diseases.

The Biography of a Virginal Mind *

EDWIN F. DAKIN (Charles Scribner's Sons, New York; $5.00).—During the year 1929 few doctors will forget to what ends they were put, fighting a senate bill which would have been a severe blow to preventive medicine. It required all the means at the profession's disposal to place this bill where it belonged, simply because it passed the senate handsomely and all but went through the house of delegates. Whether Governor Conley would have vetoed it is problematical. This bill had the backing of powerful politicians who had no more real idea what it was all about than if it had been a custom of the Malays. It is more than possible that a number of physicians were in a like position, although they at least knew the end results of the congregation's activity that was behind it. This bill gave full license to Christian Science, and while the celebrated Mrs. Eddy did not invent or found Christian Science, she at least gets the credit for it.

As was said earlier, the average doctor knows nothing of the thrilling and highly interesting history this attempt at a world philosophy obtains. And the sad part of it is that many a doctor will make no effort to familiarize himself with the facts. This book at $5.00 is worth more just at this moment to every physician and surgeon than any textbook on medicine or surgery published this year. Any wife of a medical man in any part of the United States who makes a practice of giving her husband a Christmas gift that he will enjoy and treasure ever afterward, has right at her elbow the very thing in this book. Nor will it stop there—like the family car, every one over ten years old will enjoy it, too. For here was a sickly girl—ill of hysteria of the most violent manifestations which never left her during her entire life—who, amidst the most heartbreaking adversities that we ever knew besetting a single individual's career, came out finally to found a church of a quarter of a million communicants and, as she maintained, as many more who believed but did not join.

We speak of Henry Ford being successful at a late period in life, but Mrs. Eddy was only beginning to be fairly well established at sixty. Never have we known of a human being who kept on, year after year, with as many severe setbacks amidst dire poverty and practically without a house. Her three marriages were all tragedies. The first husband—she probably loved—died of yellow fever. The second deserted her. The third was a weak-kneed puppet. According to this narrative, she was "asked to leave" from more homes than any one of whom we have ever read. Her temperament was of such a character that none could endure her long, and for such a person to found a church "free from error, where the real follower is at peace," is rather an anachronism.

We have always wondered at the rather curt dismissal the average Scientist gives to the name of Phineas Parkhurst (Quimby), as the author says, "Dr. by courtesy only." No wonder at all. Mr. Dakin shows he founded the whole thing, but, strange to relate, with no idea of profit. The book is full of testimonials of her admiration and gratitude on the part of Mrs. Eddy to Quimby. With what we would think was a colossal exhibition of ingratitude, she later repudiated these tributes. But before you get through the book you will find out

---

* In connection with publication of this review of the life of Mrs Eddy, it might be of interest to insert the following comment from the New York *Herald-Tribune* of October 15, 1929: "It is common knowledge that interested individuals are now engaged in a campaign of intimidation and threatened boycott against bookshops throughout the country selling or displaying prominently 'Mrs. Eddy: The Biography of a Virginal Mind," by Edwin Franden Dakin. . . . The agencies engaged in this smothering campaign are seeking to convey the impression that 'Mrs. Eddy: The Biography of a Virginal Mind' is an attack upon the religion that Mrs. Eddy founded and a misrepresentation of the facts concerning her life."

that Mrs. Eddy did so much repudiating that the book might have been called "Repudiation." It was our strange and innocent belief that the life of Mrs. Eddy and the history of the Christian Science church was at least a smooth-running recital. We have not recalled reading a more tempestuous and altogether sordid dissertation of passion, ingratitude, sharp practice, denial of fact, plain "double-crossing" and hypocrisy in one life. French history abounds in intrigue, trickery, fancied evil influences, and dismissal of loyal servants from positions of power on the part of the several monarchs, but if Mr. Dakin is correct (and practically all of his statements are supported by letters inserted in the text) the aforesaid history is out of focus with that of Mrs. Eddy.

On page 165, "A metaphysician never gives medicine, recommends or trusts hygiene, or believes in the ocular or post-mortem examination of patients; many a hopeless case of disease is induced by a single post-mortem examination." (*Science and Health*, 1881.) Yet she had one performed on Mr. Eddy by Dr. Noyes. Result: heart disease. She refused to believe the findings. She therefore called in an abortionist, "Dr." Eastman, graduating from a college later declared fraudulent, and who was an abortionist later to be sent to prison for five years, and he gave a diagnosis of "metaphysical arsenic poisoning."

One of the main points harped upon by Scientists is that medicine, and especially diagnoses and preventive medicine, produces fear. Mrs. Eddy's bogey was malicious animal magnetism, which corresponds to what the ignorant call "having a spell put upon you." It had more to do with what she was, what she did, and the way she turned out, according to this book, than any other factor of her existence. It is pathetic to read it.

You have wondered why so little gets into the papers about the failures of Christian Science. Chapter 27 will explain all this to you. The New York *World* proved to be a very formidable exception. On page 413 he tells you all of the personal leadership ever exerted in her church was by women. On page 418, note 2, Frederick W. Peabody, who was Mrs. Woodbury's lawyer and thereafter devoted his life to "exposing" Mrs. Eddy's life, wrote of Miss Milmine: "She assured me she had searched the whole of Mrs. Eddy's' life for a kindly, a generous, an unselfish, a fine womanly deed, and would have been only too glad to record it, but had found none." You will find, in Chapter 31, an account of the "healing side of the so-called Science." This part of it all was held to be the pillar of the hierarchy. Yet, on page 471, in one of her temperamental crises she cast it out.

Mrs. Eddy used morphine, according to eyewitnesses cited in the book, throughout her life. She was not an addict, however. She had a relative operated upon for cancer, the surgeon receiving Mrs. Eddy's check. She used eyeglasses and had an upper and a lower plate. In one place she sought four doctors for an attack of either gall or renal stones, finally receiving a hypodermic of morphine.

When Mrs. Augusta Stetson—next to Mrs. Eddy—was "fired" out of the church, one can see by the letter of Mrs. Eddy on page 488 she states publicly she had nothing to do with it. On page 490 it will be shown you she brought it about. On page 491 you will learn what you may have suspected—that some Christian Scientists had two different minds: *divine*, could not err; *mortal*, entirely error. Mrs. Stetson had made some statements. She was taken to task for them. She replied, "I know what I will do; I will deny I ever said them." Mr. Strickler said, "But, Mrs. Stetson, you did say them." She replied, "It was the human that said those things." The human was not her real self and she could say she never said them with the mental reservation that her real self had never said them.

Such was the cult or philosophy or religion that came near upsetting the medical practice act of West Virginia. Every doctor in this state owes it to himself to buy this book and read it, for the question will come up again. Mr. Dakin says people take most of their ideas by way of their emotions and not their intellects. This will explain all the other absurd irregularities we are called upon to meet. Strange to say, Mr. Dakin's book is singularly free from prejudices. Almost all of his writing is comment on letters and happenings. It is a grand old book, written beautifully, and one of the few biographies we ever read that was interesting from cover to cover. We urge on you to buy the book. There will be no regret. That's why Mrs. Eddy won out—her followers bought her book. Up until now we did not have an altogether complete one to buy. Here it is. After you have had a few hours of as surprising a perusal as you will ordinarily meet, you will no doubt realize that, if the body is ever healed by the mind, and, again, if the mind is ever made transcendental, it will all come through the medical profession, as it properly should.

pared. The mean measurements of the group of children with intelligence quotient above average are slightly greater than the mean measurements of those below average. Although slight, the differences are fairly consistent in the various age groups for each sex, and are true of nearly all the physical measurements that were taken in this study.

In view of the fact that the intelligence tests used in this study appear to be indicators of total mental equipment rather than "native" ability alone, the slight tendency for a higher intelligence quotient to be associated with better physical condition and development might be interpreted in several ways: (*a*) The handicap due to physical defects may result in slower mental development; (*b*) the children who are low in mental development may tend to come from families whose innate or constitutional physical characteristics are also below average; (*c*) the slower physical and mental developments may both be the result of other factors with which both are correlated, such as adverse conditions of various kinds. From the data at hand it is impossible to say which, if any, of these interpretations is correct, but it is possible that each of them may contain some truth.

Scarlet Fever General in State

Scarlet fever existed last week in 62 per cent of the counties of the state of West Virginia sending in weekly communicable disease reports to the State Health Department. While no epidemics were reported, the disease appears to be widespread throughout the state. Eighty-two cases were reported for the week ending October 19, or more than one half of the number reported for the entire month of September.

Last year, of the 41 deaths from scarlet fever reported to the State Health Department over 40 per cent occurred in children under five years of age and 26 per cent in children under ten. The high percentage of deaths among infants and very young children leads doctors to urge that the greatest precaution be taken to safeguard them from all sick persons.

Under the state law all cases of scarlet fever must be reported to the health officer at once and the premises placarded. The patient should be isolated for at least four weeks or until all discharges from nose, throat, ears and glands have disappeared. All other persons living in the house should be quarantined for a period of seven days. At the end of that time they may be released, provided they are free from the disease themselves, have no contact with the patient, and have taken up their residence elsewhere. Regardless of the mildness of the case, the patient must observe the minimum quarantine of twenty-eight days, said the health commissioner.

Exposure to Silica Dust

A few years ago the United States Public Health Service began a series of intensive studies on the health of workers in dusty trades. The first study was reported in 1928, and dealt with the health of workers in a cement plant. The report on the second study, dealing with the health of workers exposed to silica dust in the granite-cutting industry (Public Health Bulletin No. 187) has recently been published.

This report brings out clearly the extent of the hazard under such conditions as existed in the plants studied. Of particular importance is the fact that it was possible, by differentiating occupations on the basis of the amount of dust exposure, to determine within broad limits how much dust of the composition studied can be tolerated by workers without serious deleterious effects. The conclusion was reached that a maximum of dust exposure falling somewhere between ten and twenty million particles per cubic foot of air is a desirable limit for dust containing about 35 per cent free silica in the form of quartz. It was also concluded, on the basis of a study made in other plants having local exhaust ventilation systems, that this limit could be reached by the use of economically practicable ventilating devices of this character. The recommendation was made that occupational processes in which little dust is produced be segregated in separate rooms of buildings.

It should be pointed out that the limit established was not found to prevent the occurrence of silicosis. It was found, however, that there seemed to be no particular liability to pulmonary tuberculosis where the concentration of dust was within this limit.

The study was of such a character as to present a rather definite picture of what happens to men working for many years under a dust hazard of the extent described. The salient points may be summarized as follows:

(*a*) The long period of service before the liability to tuberculosis becomes manifest (generally twenty years or more).

(*b*) The sharp correlation between length of exposure to the dust and the prevalence of tuberculosis and also the death rate from this disease.

(*c*) The close relation between the extent of dust exposure and the health of the men.

(*d*) The universal occurrence of silicosis among the workers.

(*e*) The large proportion of workers finally succumbing to tuberculosis.

(*f*) The almost invariably fatal form of the disease within a short time after the onset.

(*g*) The different character of silicosis as manifested by x-rays compared with that shown where there is exposure to a dust with a much higher content of free silica.

(*h*) The location of the tuberculous lesion, usually basal, where the disease complicates silicosis.

(*i*) The absence of deaths from silicosis *per se*, tuberculosis apparently always intervening.

(*j*) The failure of workers to recover from their condition upon going into non-dusty trades.

(*k*) The high incidence of sickness of a severe nature from causes other than tuberculosis.

(*l*) The rising sickness and mortality rates from tuberculosis due to longer use of the hand-pneumatic tool.

(*m*) The high death rates at the present time from tuberculosis, compared with normal industrial experience.

This investigation paralleled in its method the studies which are being conducted in other dusty trades and included a record of the sickness and mortality occurring among granite cutters for a period of more than two years, complete physical examinations with special reference to the development of tuberculosis, x-rays, sputum analyses, and autopsies, together with a careful analysis of the atmospheric dustiness under varying conditions. A study of mortality among such workers based on death certificates was also made.

The bulletin is of particular interest because of the large number of excellent x-rays, microphotographs of the lungs, detailed histories of individual cases, as well as the extensive clinical discussions and the detailed analyses of statistical findings.

Health Examination Campaign

A new precedent has been established in the medical profession with the formal announcement by Dr. Iago Galdston, secretary of the Greater New York Committee on Health Examination, of the opening of a drive for public health education, to be conducted by the private physicians of Greater New York. The ten thousand practitioners represented by the five county medical societies of Greater New York are personally promoting a campaign for improving public health such as has heretofore been conducted only by governmental or institutional bodies.

The purpose of the campaign is to awaken the public to the value of preventive measures in maintaining health and the rôle of the physician as a guardian against, as well as a curer of, disease. Efforts will be concentrated during the month of November on teaching the importance of a periodic health examination as one of the chief means of warding off sickness or checking incipient diseases.

The Department of Health is supporting the project, which is also enlisting the coöperation of public schools, welfare, community, and social organizations, and public information organs such as the radio, the press, and the moving pictures.

A general meeting, open to the public, will be held on November 6 in Hosack Hall of the New York Academy of Medicine at 2 East 103d Street, under the auspices of the Greater New York Committee on Health Examination. Physicians, nurses, dentists, pharmacists, and members of all the community organizations coöperating in the campaign are expected to attend in large numbers; prominent speakers, including municipal and medical authorities, will talk on the campaign.

HOSPITAL NEWS

W. Va. Hospital Meeting Set

The fourth annual meeting of the Hospital Association of West Virginia will be held in the assembly room of the Kanawha Hotel, Charleston, on December 2, 1929, according to an announcement just released by Dr. R. A. Ireland, president of the organization. Dr. Ireland said that the program for the December 2 meeting was practically completed and that advance copies would be mailed to all members of the association early in November.

Just who the principal speaker for the 1929 hospital meeting will be has not yet been announced, but it is understood that an effort is being made to secure some outstanding national hospital executive to accept the assignment. Last year the association secured Mr. Matthew O. Foley, of Chicago, editor of *Hospital Management*, who took part in the various round table discussions and who made a brilliant address at the evening banquet. It is hoped that another man as outstanding as Mr. Foley can be secured for this year's program. Dr. Ireland expects

to announce the principal speaker within the next week or ten days.

In a recent interview, Dr. Ireland said that the board of directors of the association had decided to have only one out-of-state speaker on the program. The board felt that the major hospital problems in West Virginia should be tackled by West Virginia hospital directors and executives, who are more familiar with the difficulties encountered in hospital management in this state. The state speakers, most of whom have already been selected, were chosen for their prominence in hospital work from almost all sections of West Virginia, Dr. Ireland said.

The program for the December 2 meeting will open at 10 o'clock in the morning with the president's address, followed by one paper on hospital management. The afternoon session will be mostly taken up with round table discussions and the election of officers. The annual convention banquet, which has become quite a feature of the hospital meetings, will be held at the Kanawha Hotel that evening, with Dr. Walter E. Vest, of Huntington, president-elect of the West Virginia State Medical Association, serving as toastmaster. It has been announced that Dr. James McClung, of Richwood, will be one of the principal speakers at this banquet.

The Hospital Association of West Virginia has been growing steadily since its reorganization four years ago, and this year's meeting is expected to be the best in the history of the organization. The meetings have materially improved each year, and last year's convention is said to have been one of the best meetings of its kind held anywhere in this country. Mr. Foley, whose wide experience in hospital work has made him a national figure, said after last year's meeting that he had never seen a better and more enthusiastic state hospital gathering. He also pointed out that the West Virginia meeting was better attended than the hospital meetings of almost all other states.

Efficiency of State Hospitals

An unusual opportunity for experience and training in an attractive line of work is in prospect for young physicians of good qualifications under the new Board of Eleemosynary Institutions. The new board seems definitely determined to take this important branch of the state's business out of politics. The resulting efficiency of administration means most, of course, to the unfortunates for whom the institutions were created, and to the taxpayers who foot the bills, but if the board is able to carry out the plans to be proposed it will mean much also to those physicians who are looking for opportunities in an interesting branch of medicine.

The opportunity will be for assistants in the eleemosynary institutions. These positions may then be taken without fear that political considerations will act against security of tenure or freedom of action within the professional bounds of the position. Furthermore, contacts will be assured with men of wide experience and practicing modern methods.

Of particular interest to men embarking upon a study of nervous and mental diseases, a plan probably will be arranged for periods of training, with salary, in the finest eastern institutions. This will give assistants an advantage for which most young specialists have to pay and therefore to wait until their practice is on a materially remunerative basis—a process on the whole of lifting onself by the bootstraps.

Higher salaries and better housing conditions are in prospect under the new board. Improvements are under consideration in the present structures, and rebuilding of three of the hospitals for the insane, those at Fulton, St. Joseph, and Nevada, has been recommended to the State Survey Commission.

This line of study is one of the most interesting in the profession and the work, for the man who masters it, is most remunerative. Tremendous advances have been made in understanding and some in treating nervous and mental diseases, but still greater advances remain to be made. It is a task which calls for "bold yet balanced thought," for the brightest and most meticulous minds among our younger men. It is to be hoped that the new board can consummate its plans for offering new opportunities of discovering and seasoning them.—*Missouri Medical Journal.*

That Economic Status

Prof. Julius Grober, in a paper for the International Hospital Congress on hospital economics, presents exceptionally well the fundamentals underlying hospital service in civilized countries. He begins by laying the general interest in hospital charges to the growing importance of the hospital as a health agency, and then he carefully analyzes various phases of the hospital's work to try to find out where material reductions in expense may be made, and where increased income may be developed.

He comes to the conclusion—so often voiced at North American hospital meetings—that there is no panacea for hospital expense. Reduction of quality

or extent of service is unthinkable, since such a reduction, after all, would be wasteful in prolonging the illness, or perhaps in resulting in a chronic condition of the patient. He points to personal service, supplies, equipment, and other commodities used and consumed by the hospital, none of which is susceptible to reduction, if, indeed, they even may be held at their present rates. Good management and organization that will get the greatest possible results from the personnel and materials available are the best hopes of economical administration, he says.

Professor Grober believes that the state should encourage the work of hospitals, including those maintained by private individuals or groups, because every hospital, he points out, to a varying extent exerts a favorable influence on public health and community welfare. How different is this suggestion from that frequently voiced in the antagonistic articles in the press and general magazines which urge government control or investigation by industry, presumably with the confident hope that mismanagement and waste will be uncovered.

A thought Prof. Grober expresses and which ought to be injected into every article or argument put forth by hospitals seeking to combat harmful publicity in their communities is that war alone is more expensive than the maintenance and recovery of health. Hospitals are organized and functioning 24 hours a day for this purpose, primarily, and they must employ trained personnel, costly equipment, and use materials and supplies of a great variety, often for the benefit of some poor man or woman without a friend or a cent.

FROM OTHER JOURNALS

Man's Future in Evolution

The future of man in this world seems at present to be a subject of comparatively little human concern, perhaps because there are few definite data on which to base any cogent speculations, and few persons, at most, who are equipped either by temperament or training to venture into the field of guesswork. Although the study of the evolution of living forms has made great strides, the story of the past of man still remains fragmentary. Man in something like his present form is a relatively recent comer; there are intimations that he approached his present status within less than thirty thousand years, which is less than one tenth, possibly less than one twentieth, of his existence. Man is probably not apart in his origin, but belongs to the rest of the living world. His known transformation from the Neanderthal individual to the *homo sapiens* of today furnishes an index by which the possibilities of further change may be interpreted.

At a recent meeting of the American Philosophical Society in Philadelphia, Hrdlicka[1] ventured a few predictions as to man's future in the light of his past and present. Hrdlicka foresees further differentiation and refinement of the brain and of the sensory nervous system. The main changes will be in the internal organization of the brain, in a greater blood supply, in a greater general effectiveness. According to Hrdlicka, the skull will in all probability become thinner; it may be expected to grow fuller laterally and anteroposteriorly. The hair of the head will probably be further weakened. The stature promises generally to be even somewhat higher than today among the best nourished and least repressed groups. But there is no indication as yet that it may reach what today would be termed giganticism.

Many other details have been predicted, but only a few are of direct medical interest. As to the internal organs, the only more plainly foreshadowed probabilities are a further weakening and diminution of the appendix and a shortening, with diminution in capacity, of the intestine. As food may safely be expected to be continually more refined and made more digestible, the necessity of a spacious, large intestine will diminish in proportion. Physiologically, the tendencies indicate a rather more rapid than slower pulse and respiration, with slightly increased rather than decreased temperature—in other words, a livelier, rather than more sluggish, metabolism. But substantial changes in these as well as in other organic functions are not to be anticipated for milleniums; these functions are too firmly established. There will be various anatomic and physiologic deteriorations, due to man's changing customs and environment; and they will call, as heretofore, for the application of the master minds of medicine.

1. Hrdlicka, Ales: Man's Future in the Light of His Past and Present. *Proc. Am. Phil. Soc.*, 68: 1, 1929.

—*Journal A. M. A.*, Aug. 3, 1929.

Expert Medical Testimony

A Pertinent California Court Case.—As this issue of *California and Western Medicine* is being prepared for the press, an automobile accident trial is before one of the courts of Los Angeles, in which testimony of reckless driving and drunkenness, with a charge of murder, are interwoven with testimony

and opinions as to the gravity of the shock and injuries received at the time of the accident, and the possible effects which an anesthetic and a hip-joint reduction might have had in the death of one of the victims in the accident.

The prosecution on the one hand and the defense on the other vied with one another in the amount and nature of the testimony submitted by their respective medical experts. In one of the Los Angeles papers of even date with the writing of these comments, it is stated:

"The physicians who testified yesterday all based their opinions on the same 1500-word hypothetical question framed by the defense Wednesday and propounded to the defense surgeons; but while all of the defense doctors testified that Rokumoto died from the anesthetic and not from the automobile injuries, the situation was reversed yesterday.

"So now, insofar as the record of the case goes, five doctors have said one thing and five more the exact opposite, with the possibility of a few more to come."

A Reform Needed in Expert Testimony Procedure.—The above excerpt carries its own suggestive thought to all members of the medical profession who have given any study to medico-legal testimony. It is the presentation of situations such as the one outlined in the above quotation from a daily newspaper, and which, in better or worse form, is an example of what practically appears in newspapers throughout the land that has led leaders of the medical and legal professions to ask a betterment of court procedures in the matter of expert medical testimony. Readers of this journal may recall that, in the March, 1929, issue, page 165, there was printed a paper by Wagner on this subject. An excellent analysis of some of the present-day evils with suggestions for betterment through needed laws, which were presented to the California legislature of 1929, but which unfortunately did not go on to passage, were therein discussed.

The American Medical Association's Attitude on Expert Medical Testimony.—In last month's issue, page 223, the abstract of the proceedings of the house of delegates of the recent American Medical Association Portland meeting contained the full resolution on medical expert opinion which was adopted by that body. One paragraph therefrom is here reprinted, because it states in good form the opinion which is held by leaders of the medical profession in the United States on certain phases of this important public health and medico-legal problem. The paragraph is as follows:

"Resolved, That the House of Delegates approves the principle of securing, in the case of all capital charges and in the case of as many other criminal charges as the psychiatric facilities of the state will permit, an impartial and routine mental examination of the defendant in advance of the trial as a means of obviating the contentious introduction of partisan testimony; and that it approves further the principle of removing, as far as possible, the question of sanity from the trial itself, reserving the employment of psychiatric data for a post-trial inquiry to determine what treatment is appropriate to the convicted persons. . . ."

It is hoped that the Council and Committee on Public Policy of the California Medical Association will construe this subject to be of sufficient importance to merit study and possible draft of a bill which could be submitted to the California legislature in January, 1931. Members of the California Medical Association who are interested in a proper solution of the medico-legal problem are invited to write to the Committee on Public Policy, the membership of which is listed in all issues of the California Medical Association directory.—*California and Western Medicine.*

Growth of Body and of Mind

Biologic growth is a spectacle of never-ending wonder. The accretion of the individual units observed in an enlarging crystal is vastly different from an increase in numbers of cells with the concomitant change in quality as seen in biologic growth. This phenomenon has been defined as a correlated increase of body mass in a definite time and in a manner specific for the species.[1] Can we assume that mental growth should, to a certain extent, parallel somatic growth? Is there any correlation between mental abnormality and bodily development? The traditional athlete of magnificent physique but of limited mental ability and the genius with a deformed body are types, frequently seen, which prove the fallacy of drawing sweeping conclusions. It is possible to arrest body growth in experimental animals by various dietary measures. When this is done it has been shown[2] that the ability to learn to solve a problem and to adjust to a changed situation may be enhanced rather than diminished. Since man may not be subjected to rigidly controlled experimental conditions, data on the correlation of body

growth and mental development must be obtained from clinical statistics.

The records of a series of 923 patients with mental disturbances have been studied by Wertham[3] in an effort to determine whether or not there is a parallelism between the incidence of growth disorders and mental disease. The abnormalities of somatic growth which were especially observed were definite congenital malformations and structural alterations, some typical of the outspoken endocrinologic syndromes and some with less well-defined causation. Of the entire number of patients, 21 per cent showed growth disorders. The largest incidence was found in the schizophrenic psychosis group, in which eighty-four of the total of 231 showed growth disorder, while in the manic depressive group only one of the forty-one cases exhibited structural body malformations. About one fourth of the patients in each of the paranoid psychosis, epilepsy and agitated depressions groups showed abnormalities of growth. Contrasting further the two groups showing the extremes of incidence of somatic growth disorders, Wertham states that the patients with manic depressive psychoses tend toward unstunted and harmonious body growth and that they are personalities with similar harmonious mental development until the effective psychosis interrupts this mental growth. On the other hand, schizophrenic patients "frequently show in their prepsychotic mental development traits of inharmonious growth, immaturity, and combinations of mental precocity and arrested development in intellectual, emotional and instinctive life." It thus appears that in the two groups of mental cases contrasted, the schizophrenic and the manic depressive, there is a striking parallelism between the incidence of disorders of body growth and mental development prior to the time when psychopathologic manifestations appear.

It seems uncertain which of the two growth distortions is cause and which is effect. It is known that psychic influences can exert and effect on gastrointestinal activity and even on basal metabolism. Likewise, alterations in the body structure of animals and of man may induce mental changes, some of which are highly favorable to the organism as a whole while others result in essential mental incompetence. In the absence of more definite correlation between the psychic and the physical, it is well to strive for ideal growth of the body and thus provide the most favorable sphere for development of the mind.

1. Schloss, E.: Die Pathologie des Wachstums im Sauglingsalter Berlin, 1911, p. 4.
2. Anderson, J. E., and Smith, A. H.: *J. Comp. Psychol.*, 6: 337, October, 1926.
3. Wertham, F. I.: *Arch. Neurol. and Psychiat.*, 21: 1128, May, 1929.

—*Journal A. M. A.*, August 3, 1929.

Leaving It to the Doctors

Daily there are numerous indications that the lay press, at least, is of the opinion that the medical confraternity knows something about its own business affairs and the fashion in which these affairs should be conducted. Quite to the point is this editorial that appeared July 15, 1929, in the Chicago *Tribune*:

"The secretary of the interior, Ray Lyman Wilbur, speaking at the convention of the American Medical Association, told the doctors that they would have to find a way to reduce the cost of medical care to the middle classes or a way will be imposed upon the doctors. Dr. Wilbur speaks with the authority of his office in the government and as chairman of a national committee which is studying the question involved in medical charges.

"The fact that Dr. Wilbur found it possible, at a convention of physicians, to state his views thus bluntly is, in itself, the most hopeful aspect of the matter. No one who has experienced or observed the effect of a siege of illness upon the budget of a family in moderate circumstances can doubt the need for modifying present conditions; but it is no less true that the ablest practitioners of all sorts, the leaders of the profession, are themselves the leaders in the movement for the reform.

"It is not easy to work changes overnight, particularly if the changes upset long-standing professional relationships and standards. Any one who has observed the resistance of lawyers in our legislatures to the removal of flagrant abuses in the criminal and civil codes will regard with admiration the willingness of doctors to examine the traditions of their profession. If there is hesitation, it must be remembered that doctors as a class are far from being overpaid, and under the circumstances it is scarcely remarkable that the majority of the humbler members of the profession are willing to accept changes until they have some assurance that their livelihood is not to be further imperiled.

"A solution of the problem of medical care for the middle classes which would result in impoverishing the doctors would be worse than no solution at all, for it is to the advantage of the community to attract able intellects to the practice of medicine. This

position must be conceded, we believe; by even the most ardent advocates of reform. It has been conceded by the sane supporters of Dr. Schmidt in his controversy with the Chicago Medical Society. While it is no doubt true, as Dr. Wilbur said, that if relief for the middle classes is not devised by the doctors it must be imposed upon them, the probability that they will lose the initiative is for the present not great. In spite of the Schmidt case, laymen have not lost confidence in the good will of the medical profession in its relations to the public.—*Illinois Medical Journal.*

Philosophy, Science, and Medicine

Philosophy and metaphysics have come to be almost synonymous. Science has come to designate the special sciences (biology, physics, etc.). The one is regarded as the antithesis of the other. In this sense medicine is regarded as belonging to the sciences, and medical practice as being scientific. The medical practitioner makes great pretense at being a scientist, but scorns being a philosopher. The one implies a clinical laboratory practice, which involves the application of the special sciences (physiology, pathology, anatomy, etc.); the other, the empiric use of means not tested by laboratory methods.

These ideas have been propagated by the medical schools, largely because the clinician has striven for recognition in the field of the special sciences. Instead of being proud in his own field of work, he has more or less envied the laboratory workers in bacteriology, pathology, or physiology, and allowed them to impute to their work the higher type of endeavor. As a result, the young medical graduate is largely a laboratorian. His view of clinical medicine is narrowed to the fields of the special sciences. We are, therefore, failing to develop philosophers in the field of medical sciences. All great clinicians have been medical philosophers; not just cold-blooded scientists.

If philosophy is conceived to be an attempt to systematize or unite isolated bits of certain knowledge into a coherent view of the whole, then certainly the clinician must be a philosopher who, according to this conception, is a scientist. In my opinion, every medical student should be given this conception of his profession. He should be so trained that he would never approach a patient as a pure scientist in the narrower sense, but as a man so well acquainted with methods of observing physical phenomena and so well versed in the special medical sciences that a philosophical consideration of his observations develops for him a clinical picture which is as true a representation of the patient's condition as is possible.

It is then apparent that clinical studies are not alone carried out by laboratory methods, nor by physical examinations, but require as well a serious consideration of what the patient can tell about himself. It is also apparent that the facts revealed by such a study do not alone afford a diagnosis. It is only after the gaps, which exist between the bits of knowledge thus acquired, are bridged by a philosophical consideration of them that a picture is completed, which is a clinical diagnosis.

We often hear discussions of the value of the laboratory in medical diagnosis. These discussions always attempt a comparison of the value of methods practiced in various special fields of medicine. The student with a broad conception of medicine knows that no such comparisons are relevant. The special fields of practice can not stand alone. The attempt in diagnosis is to develop a picture which is complete; not to bring out alone a nose or a chest and expect to recognize the individual. An attempt at a comparative evaluation of the different methods used in medical diagnosis indicates a lack of a philosophical understanding of the problem. The specialist who undertakes to treat in his narrow field without first developing or having developed for him a completed clinical picture falls as far short of the high attainment which is implied in his profession as does the man who relies upon one method of clinical study for a diagnosis.

The difference between a technician and a physician is revealed by his conception of philosophy and science as related to medical practice.—*Wisconsin Medical Journal.*

MEDICO-LEGAL

Consent of Minor to Vaccination

(Gulf & S. I. R. Co. v. Sullivan (Miss.), 119 So. 501.)

Sullivan, a minor, aged 17 years, claimed to have been employed as a section hand by the appellant railroad company without the consent of his parents. Under orders of his foreman he was vaccinated by a physician retained by the company. He knew the purpose of the vaccination. The vaccination resulted in the serious impairment of the use of his arm. He sued the company, claiming that his employment was in violation of section 1080, Code of 1906, and

section 848 of Hemingway's Mississippi Code of 1927, which make it a criminal offense to "persuade, entice, or decoy away from its father or mother with whom it resides, any child under the age of twenty-one years if a male, or eighteen if a female, being unmarried, for the purpose of employing such child, without the consent of its parents, or one of them." His vaccination under the circumstances, he contended, in the absence of the consent of his parents, was unlawful. Judgment was rendered for Sullivan, and the railroad company appealed to the supreme court of Mississippi, Division A, denying liability unless the vaccination was negligently done. There the judgment was reversed.

The vaccination of one person by another without the consent of the person vaccinated, said the supreme court, citing as authority American Law Institute Restatement, Torts (Tentative No. 1), sections 12, 13 and 74, subjects the one who vaccinates to liability, regardless of whether the vaccination is performed negligently or not, and if the person vaccinated is by reason of his youth incapable of understanding and appreciating the consequences of the vaccination, his assent to the vaccination is not consent thereto. The consent of a parent, if it is within his power to give it, has the same effect as the consent of the person vaccinated would have if he had the capacity to give the consent. From the evidence, the court concluded that it was manifest that Sullivan had sufficient intelligence to understand and appreciate the consequences of vaccination and therefore was capable of giving a valid consent to it. Furthermore, since his parents knew of his employment, their passiveness must be held to be an implied consent to it and its necessary incidents.—*Journal A. M. A.*, October 26, 1929.

Genital Tuberculosis

(Green's Case (Mass.), 165 N. E. 120.)

Green was in receipt of compensation under the workmen's compensation act, on account of a hernia that followed an injury, November 16, 1926. The insurer filed a claim for review. The industrial accident board then found that the injury had aggravated a preëxisting genital tuberculosis, which totally incapacitated the employee. In the superior court of Suffolk county a decree was entered in the employee's favor. The insurer appealed to the supreme judicial court of Massachusetts, and there the decree of the superior court was reversed.

The question before the court was whether there was any evidence to warrant the finding of the industrial accident board that the injury aggravated, to the point of total incapacity for work, a preëxisting genital tuberculosis. If the injury did so, the employee was entitled to compensation. An "impartial physician" testified that a strain such as the employee received, resulting in a hernia, could neither cause genital tuberculosis nor awaken a quiescent tuberculosis of the genitals. Another physician, testifying for the employee, was asked: "Assuming that there was trauma sufficient to cause a hernia, might that trauma causing a hernia awaken a quiescent genital tuberculosis?" He answered: "I think that is reasonable—it does not cause it, but the tubercular bacilli is in the epididymis and if there is a blow or trauma that is sufficient to cause a hernia it is conceivable to witness that the trauma causes irritation around the tubercle bacillus and awakens it and makes it become active." Considering the nature of the disease, the court said, even if it could be inferred that the germs of genital tuberculosis were in the system at the time of the injury, there was no evidence to warrant a finding that the strain accelerated or hastened their development. The fact that the condition of the employee might reasonably result from the injury, or that it was conceivable that this condition might so result, was not sufficient to justify the conclusion that the condition was casually related to the injury. A mere conjecture is not proof; there must be evidence to support the finding.—*Journal A. M. A.*, October 26, 1929.

Blood Sugar Testing Outfits

The various blood sugar testing outfits on the market are, for the most part, satisfactory for clinical work, especially when one wishes to follow the blood sugar values from time to time. None of these instruments are as reliable as the special methods advanced in the literature, but most of them are based on the principles of these tests, so that the difference is largely one of degree of accuracy of the results. If one uses the same instrument or method on different specimens of the patient's blood, whatever error there may be in the outfit or method employed is introduced at each testing, so that the results obtained are comparable. It is hard to see how the Sheftel sugar test can yield anything more than a rough estimate of the sugar contents. The claim of a percentage of error of less than 0.1 per cent is so ridiculous as to throw discredit on the originators.—*Journal A. M. A.*, August 3, 1929.

GENERAL NEWS

Southern Medical Meeting

In spite of the distance from this state, it is thought that West Virginia will have its largest delegation at the Miami meeting of the Southern Medical Association, which will be held on November 19–22, 1929. Perhaps the greatest single cause for this enthusiasm lies in the fact that a West Virginian, Dr. T. W. Moore of Huntington, is this year's president of the Southern Medical Association. It is understood that a West Virginia demonstration will be made when Dr. Moore makes his presidential address at Miami.

A special train, known as the "President's Special," is leaving from Louisville to carry most of the membebrs from the northern tier of states. A special pullman car, carrying many of the West Virginia delegation, has already been arranged for and will leave Huntington at 12:45 P. M. on November 17, to connect with the President's Special. It is understood that practically all of the reservations for the special pullman have already been taken.

One of the features of the Miami convention this year will be two post-convention tours of Cuba, which are in charge of Mr. C. P. Loranz, secretary of the Southern Medical Association. The tours will be conducted on the all-expense plan, and will leave Miami on November 23. The tours are for four and five days, respectively.

That the members of the Southern Medical Association will be welcomed with due ceremony in Miami is evidenced by the following communication received from Dr. B. L. Whitten, chairman of the Miami publicity committee. The letter reads:

"When the Southern Medical Association, founded in 1906, began holding its annual conventions, the city of Miami, yet in its prenubile state, numbered in population five hundred. During this period of scarcely a generation Miami has metamorphosed, emerged from its chrysalis on Biscayne Bay, and now enjoys the title, "Florida's Metropolis," with a year-round population of 150,000.

"Basking in the sun of tropical United States, and blessed with the most equitable climate in North America, Miami is justly called the playground of the nation. This claim is substantiated by the annual influx of American pleasure-seekers, Greater Miami playing host to two hundred thousand each winter.

"In the brief space of a few years Miami has become nationally known as the convention city of the East, having been the convention city for the Shriners, Elks, Lions, and other national fraternal organizations. Miami was chosen for these conventions because it is built to play host to vast numbers of guests, its hotel facilities being as fine as can be found in any city in the country.

"Amidst tropical beauty and sun-kissed seas, boating, horse and dog racing, swimming, superb golfing and fishing, polo, air rides, Jai-Alai games and Madison Square Garden entertainments are offered our guests. Everything the ingenuity of man has perfected for pleasure, diversion and recreation that the tropical climate permits of, is awaiting you here at the American Rivièra. Greater Miami will extend welcome to you as a body, and the Dade Medical Society will greet and entertain you and your families individually.

"We realize the benefits this city and the local profession will derive from your favored visit. When our work is done and time for play has arrived, you'll find a brief sojourn, by air, to our neighboring foreign cities, Havana and Nassau, will be a fitting chaser to the sparkling drink of American tropics you'll imbibe with us.

"Speaking for our city, the Dade County Medical Society bids each member and his family welcome, urges you to attend this twenty-third convention of the Southern Medical Association."

Socialized Medicine *

Translated by L. L. BIGELOW, M.D., *Columbus, Ohio.*

[EDITORIAL NOTE. Dr. L. L. Bigelow, Columbus, Ohio, a recent past president of the Ohio State Medical Association, has kindly furnished *The Journal* with this translation of the following interesting and illuminating article on "Medecine Sociale" from *Le Presse Medicale*, and in which socialized medicine through panel practice in France and Germany is analyzed with arguments for and against, and with comparisons and counterdistinctions from genuine "state medicine." It will be remembered that in the February issue a translation by Dr. Bigelow was published from *L' Ami du Peuple* on the same general subject and to which the present article may be considered as a supplement. Dr. Bigelow has recently returned home after a year abroad, during which time he observed "social medicine" in operation, and during which he took special post-graduate work in neurological and general surgery. *The Journal* is fortunate in being able to present Dr. Bigelow's instructive and timely translation.]

Médecine Sociale and Social Insurance.—Social insurance schemes, by their repercussion on national economic life, on public finances and on the mentality of the people, constitute one of the most serious questions of the hour.

The law, making social insurance obligatory, was passed by Parliament by a vote dictated through a selfish interest with the next elections in mind, a vote which did not settle any of the essential problems.

It is important that physicians, without whose aid

* This article is taken from the enterprising *Ohio State Medical Journal*, issue of October, 1929.

the law can not be effective, should have as clear a conception as possible of the immediate and remote consequences of this law; they will thus be able to approach with much better discernment the multiple and formidable difficulties awaiting them.

A confrère, Ervin Lick, of Danzig, who was a "panel" physician for two years, has just published an extremely interesting book under the title, "The Evils of Social Insurance and the Means of Remedying Them."

Lick's book has been translated by our distinguished confrère, Dr. Nordmann of Colmar, who does not share the opinions expressed by the author, but who has judged it his duty to translate this book as a source of information to French legislators, so that they may avoid the dangers to public health and morality which have resulted from social insurance in Germany.

Le Presse Médicale deems it worth while to analyze Lick's book and set forth impartially the ideas therein contained. Physicians will judge, at any event they will join, we are sure, with the editorial board of *Le Presse Médicale* in thanking Drs. Lick and Nordmann for the valuable information they have furnished their colleagues in France.

In the introduction of his book, Dr. Lick traces briefly the German history of social insurance, and remarks that when the foundation stone of social insurance was laid the opinion of the German medical profession was not asked—"a very singular procedure, for without the collaboration of doctors they could not dream either of the construction or the continuation of this grand edifice." What has happened? The doctor has left the temple of science in which he was priest, not to occupy in the palace of social insurance the same dignified situation; far from that—it is the bureaucrats and the secretaries who are enthroned there today—but to become a humble workman, a simple hireling. I know of no profession which in forty years has been subjected to such a terrible degradation. It would be an immense satisfaction if this sacrifice has not been made in vain, if the conservation and improvement of public health had not been too dearly purchased by the ruin of the medical profession.

We shall see later on if this sacrifice was worth while. Lick brings out first the advantages of sickness insurance *for the insured* and *for the doctor*.

Advantages of Social Insurance for the Insured.—Has sickness insurance brought any advantages to the insured? Without a doubt. Among poorer people in families who live on their daily wage, a serious illness, especially if it involved the family mainstay, was formerly a serious menace even to existence. A sickness of long duration meant hunger and despair.

Sickness insurance has produced a fundamental change. Thanks to his contributions and to those of his employer, every insured individual has acquired the right to appropriate medical treatment, and in case of incapacity to work, the right to a sickness indemnity sufficient to protect him and his family from ruin. In addition to medical care, in which is comprised expensive diagnostic procedures, such as x-rays, the panel allows, without cost, medicines, dressings, apparatus, glasses, etc., and, in the case of patients sick enough, admission to the hospital.

The excellent medical care at the disposal of each insured individual is profitable not only to him, but indirectly to the people as a whole. Early diagnosis of contagious diseases (diphtheria, scarlet fever, typhoid fever, tuberculosis, syphilis) has made possible the isolation of patients affected, and thus dangerous epidemics are avoided; rapid and efficient cure of the sick and injured limits the loss of productive labor and increases, therefore, the total production of the German people.

Advantages of Social Insurance for the Doctor.—Has sickness insurance brought any advantages to physicians? To this question one is obliged to answer "Yes." The panel facilitates the establishment of young doctors, gives them something to do, a chance to pick up medical experience and to deepen their knowledge of medicine.

One's first impression is quite favorable, but the doctors who are the Cariatides (pillars) or, more simply, the porters of social insurance, are all agreed that the actual form of social insurance is untenable, that the drawbacks to panels for sickness are not only mere imperfections, but that they constitute a grave menace to the public health and to the medical profession.

Disadvantages of Social Insurance for the Insured.—1. Intrusion of a bureaucratic administration into the natural confidential relationship between patients and doctors. The patient must take himself first to his employer, then to the panel, and finally to the doctor. The knowledge not only that he is sick and suffering, but in addition and at the same time he is number 54812 on the panel, is not at all pleasant to a great many people.

2. Surrender of professional secrecy. On each certificate of the patient the malady is inscribed. Latin names are forbidden by many panels.

3. Sickness insurance saps virility of mind, favors physical and moral effeminency, and leads to the conscious cultivation of illness. Being sick becomes a remunerative profession. Husky fellows with microscopic abrasions of the skin want to be carried as unfit for work. The least blush on the tonsils, the slightest stomachache, an innocent cold in the head—an army of patients with imaginary ills fills up the waiting room of the doctor.

"Experienced physicians estimate that at least two thirds of the services rendered by panel doctors are superfluous. But, unhappily, superfluous medical treatment is often harmful; it leads to neurasthenia, melancholy, to the cultivation of illness. . . .

"The statement that maladies are cured more quickly among the insured because of an early diagnosis, because of abundant and free treatment, is simply false; quite the opposite is true."

Observation confirms the fact that illness and injury are recovered from much more slowly among functionaries and employees than among those who are strictly private patients.

The desire and the necessity of regaining health and the ability to work rapidly, favor cures in an extraordinary fashion.

Cast a single look over the decisions of the commissions of control and one will be appalled; hundreds of certificates of incapacity for work are distributed by one doctor in a brief period of time. With the exception of some cases, few in number, all the workmen provided with these certificates were declared able to work. Many of the patients (when summoned for a control examination) do not even present themselves before the commission but promptly take up their former work again.

"It is not so much epidemics as it is economic crises that fill up the waiting rooms of panel doctors

"In one middle-sized city, ten railroad employees were hired one day; the same day, nine of them were declared by a doctor to be sick and unable to work. . . . A manufacturer, one of my friends, was forced some time ago to discharge 50 young women. Not less than 49 of them were, within a few days, in possession of certificates of illness, certifying in black and white their inability to work."

Staffert-Sternade, in the *Journal Medical de Münich*, 1927, number 15, describes "Christmas fever," which attacks only those who are affiliated with the panel. The patient takes sick on the 15th of December and gets well on the 8th of January. During this period fête days are so numerous that the shrewd fellow with his certificate of illness makes exactly as much as the healthy worker does from his arduous toil.

In 778 panels with 7,918,412 members in 1926, 1,259,016 patients unable to work had to be asked to present themselves for control examination (in round numbers, 16 per cent of the insured); 198,412 did not even present themselves for examination, but reported for work before the date set for the examination; 219,912 discovered that they had recovered on the day of the examination, and 292,133 were found to be able to work at the control examination. Thus 710,188 patients, or 56.5 per cent, were pseudo-sick who went back to work as a result of a control examination or because such an examination was to take place.

Thus are explained the increased contributions, for sickness insurance today entails a very high cost; the panels for German patients expended, in 1925, one billion in gold; in 1927 it will be two billions.

The immense bureaucratic machinery of the panel costs, naturally, a lot of money; in Germany there are 27,000 employees of the panel and 40,000 doctors. A walk along the streets of big cities shows the magnificent palaces of the panel administrations.

To sum up, the industrious, capable, strong, and the honest workmen pay an unnecessary expense for the slackers and the sluggards.

Everywhere there is developing this unhealthy idea: I belong to a panel; therefore, I must get something out of it.

Bunge (*Zür Losung der sociale Frage*, Basel, 1920) wrote as long ago as 1920: "We are steering toward that ideal where half the people lie in sick beds and the other half is occupied in caring for them. The gods alone know who is finally to take care of the caretakers."

Sickness insurance not only leads to an enfeeblement of character but also to a moral degeneration. Everywhere, especially in Germany, new classes in the population are being favored by sick panels (for example, panel for functionaries, panel for the middle classes). What do we see? People who attended tranquilly to their business and passed the latter days of their existence without paying any great attention to the petty annoyances of life and old age, now haunt the doctor's office, for they are insured and the panel will pay. We have succeeded in disturbing (disquieting) these final days of life, which no worry about sickness troubled formerly, by propelling new classes of the people along the road toward neurasthenia and melancholy.

Objections to Sickness Insurance for the Doctor.—Medical fees are pitiable. The biggest panel at Danzig (general local panel with 50,000 members) allows the doctor, for each patient he has cared for during three months, six florins; that is, two florins per month, and even this insignificant sum exists only on paper: as the final settlement is subject to a forfeit, the panel only pays, on the average, two thirds of the calculated amount (in 1924, 60 per cent; 1925, 59 per cent; 1926, 63 per cent); therefore the doctor receives about one florin 60 per month. A comparison: a hair-cut with massage at Danzig costs one florin 80. Under these conditions there is only one way for the panel doctor to make a livelihood: volume must be sought for, and to fill up his consultation room every pimple must be cared for—the patient must keep on coming back.

It is commonly known that the "lions" of the panel are almost always relatively young doctors (25 to 35 years), for the young doctor, concerned with making a place for himself, finds it easy to turn a deaf ear to the warnings of the medical conscience; he gives certificates of inability to work with an obliging and generous good nature, sees things which are really not there, and attributes to trivial abnormalities an unwarranted importance; in short, he conducts himself like a business man and not like a doctor.

The consultation room of the doctor is no longer the temple where the patient seeks restoration of health, but the exchange where one conducts business. It is a question of papers, reports: the doctor gets together a mass of them—red, green, yellow, blue. One report alone is worth, it is true, but a few pfennigs, but a heap of them counts up. It is the report, moreover, that the patient wants; that is to say, the certificate of illness, which represents money.

Mass treatment means careless and superficial work. With the best will in the world, one can not in the same day examine sixty, eighty, one hundred patients at his office, make ten to twenty house visits and fill out the red tape, lists, formulæ, certificates of visits, and calculate the complicated deductions.

Mass treatment does not leave the doctor time for improvement or rest.

Practice for the panel doubtless makes it easy for the doctor beginning his professional life, but even for the "lions" with an elastic conscience, the receipts are not so formidable, since the panel doctor may not in any event exceed a certain maximum, which at Danzig is 26,625 florins (about $5,000). During an epidemic of grippe, for example, a doctor may travel day and night, ruin his health, and yet earn not one pfennig more. What business, what merchant, would assume for pay as little as this an equal amount of work, care, and responsibility, with the continuous obligation to be at the disposition of their clients during the night as well as the day?

The German medical corps, formerly free, has become enslaved. A laborer who does not want to work is quite sure to find a complaisant doctor among the group of competing doctors. If you ask workmen why they have not been on the job for so long a time, they will tell you, "I have had my fingers on the sickness indemnity." "But have you then been sick?" The reply is always, "Why, no, but I was under medical treatment." How can one continue to hold even in small esteem a medical profession reduced to such a pitiable rôle, a profession whose complaisances are a matter of public discussion? This explains the discouragement and moral depression which has gotten hold of so many doctors, and especially the best doctors. One single reason holds them still in the chains of the panels, and that is the impossibility of going outside, for today, practically speaking, there is no longer any private practice in Germany.

In passing, Dr. Lick refutes the allegation of the politicians who attribute to social insurance the amelioration in the public health. When one speaks of diminution in mortality, of the increased duration of individual life, we must beware of hasty conclusions. Aside from the progress in public hygiene and in medicine and all its branches, a host of conditions—better housing, better food supply, etc., etc.—have had a marked influence on health and longevity.

Conclusions.—Conclusions of Dr. Lick: Social insurance, useful here and there for the individual, is disastrous for the people as a whole. Insurances in general of social institutions have become highly unsocial; for altogether too many people they are nothing but vast fields from which harvests may be obtained without work. Let idleness reap a greater wage than work and there is a suppression of all desire to work, not only among those who have income and indemnities but also among those who, in spite of their arduous toil, earn less than the idle.

Enough, adds Lick: Every doctor, every employee, many intelligent and industrious salaried people, the administrators of the panels themselves, are sufficiently well aware of the abuses of social

legislation. They know that we can not go on much farther along this road.

Remedies.—For many years the doctors and the panels have been making serious efforts to remedy the established evils—there are medical boards and sub-commissions and super-commissions without number. Legal steps are taken against doctors who certify too lightly illness and inability to work, or who prescribe medicine in an exaggerated manner. Censures, fines, exclusions for a period of several months from the roster of the panel threaten the culprits.

On the other hand, the malingerers and the fakirs are dropped unceremoniously. Repressive measures can be increased; a stricter surveillance of medical certificates, a firmer control of regulations is possible; the personal responsibility of the insured can be reinforced by requiring them to help defray the medical and pharmaceutical expense. Lick does not think that much relief will be offered by these measures, which only means an increase in the amount of paper and ink consumed and more bureaucrats. "Just as during the war, when economy was compulsory, we could not put a policeman at the side of every hen that was laying an egg, so now we can not find a place for a panel inspector in the private offices of all the doctors."

All these investigations and repressive measures demand a great deal of time and provoke animosity on all sides; if they have succeeded in attenuating the gross abuses they have not changed the system, the foundation of which is false, and they will not change it in the future. The system is false. Both parties know it, or suspect it at least; both parties who now for some decades have been wearing themselves out in desperate, costly and fruitless struggles.

How, then, to do away with the insurance abuses or at least to so far minimize them as to make them supportable? There are, says Lick, only two methods:

The suppression of social insurance, or
Their radical transformation.

According to Lick, the first method is not practicable. The panels have become in Germany a powerful political instrument. The directing committees of most of the panels have passed into the hands of the unions—a state of affairs that could not be done away with without civil war.

On the other side, the fundamental idea (that is to say, mutual aid) is so excellent that no one could dream of depriving the workman who lives from day to day, who has work today and no work tomorrow, of a provision which in itself is a precious thing.

Furthermore, public opinion in general is on the side of the panel. Living is costly—food, clothing, lodging. The words "reduction in prices," "general lowering of the cost of living," are only mirages. One single thing is certain: They can pay the doctor poorly and always more poorly. For some decades the doctor has demonstrated to the world that he is ready to work for a paltry fee (medical treatment for one month costs 1 florin 60 while a single haircut costs 1 florin 80). Why, then, should not the middle classes profit from this windfall, and the wealthy, who are not so numerous? Why should they not avail themselves of the possibility of obtaining medical care at a bargain? A saving effected in this manner will finance a trip to Italy.

The problem may be thus summed up: Forty-five thousand German doctors, of whom in round numbers 40,000 are panel physicians, represent a profession indispensable to individual as well as public health—a profession which is, from the scientific point of view, well trained, hard working, sincere and earnest. Two well-developed organizations, the Union of Medical Societies and the Hartman Federation, include practically all the doctors; their leaders are brilliantly endowed and devoted; the army of doctors is prepared for sacrifices and quite aware of the values at stake. The medical body is not then an adversary to be rated lightly, but it has to deal with a powerful opponent.

Opposite these 45,000 doctors there are millions of organized workmen. The state has for the doctors many fine promises, but that is about all.

The doctors might have perhaps as allies some associations of employers, but employers are always by definition *antisocial*, or, if not, they can be easily made to pass as antisocial. The other liberal professions have enough to do for themselves, and will not take one step in favor of the doctors.

The Federation of the Panels, conscious of the danger it runs from the great number of malingerers, has prepared one supreme effort to have the doctors devoted entirely to them as a special police force. They are building enormous polyclinics, sanatoria, convalescent homes; in a short time they will say to the doctors, "We will make an agreement with you. We will assure you a reasonable income, according to the scale of salaries paid to employees of the state and with a right to a pension, furthermore, we will place at your disposal, at our expense, naturally, the best and most modern means

of diagnosis, x-rays, diathermy, ultra-violet rays, etc."

The Federation of the Panels will begin the fight as soon as its equipment is ready and as soon as it will be assured, aside from its old associates (workmen unions), of new, indispensable allies, notably from among the great number of young doctors without practice.

The great majority of German physicians vigorously resent the idea of becoming panel employees; but one can not see very well how they can resist, for most of them live only through panel practice and are entirely dependent on it. Many German physicians see the remedy in a fundamental reform which would guarantee, or, better, fix legally, *free choice* of the doctor. Dr. Lick does not believe, as things now are, that this reform is possible, and he sees but one way out of the mire in which doctors and those who are insured are sunk, *i.e.*, state employment—the regimentation of the doctor. The panel doctor will become an employee of the state and not an employee of the panel. Dr. Lick sees in this new incarnation of the doctor several advantages, and he points out the evil consequences.

Advantages of State Medicine for the Doctor.—1st. The doctor is no longer interested in the illness, but in the health of his patients. As it is now, the more patients there are drawing money from the panel, the more the doctor participates. With fixed appointments it will be to the advantage of the doctor for the health of everybody to be perfect.

2d. The financial worries of the doctor will be considerably mitigated.

3d. The doctor will have enough time for recreation and study.

4th. The doctor, as an employee of the state, will be able to adopt a more objective and impartial attitude toward the patient. The manager of the local panel at Danzig has said of the doctors that they are the police agents of the panel. Is not a policeman more independent if he is paid by the state than if he depends financially on the people whom he must keep an eye on?

5th. Respect for the medical profession will mount anew, for the doctor will command his patients instead of obeying them.

6th. Competition of doctors among themselves will be largely done away with.

7th. Freed from continual bickerings with the panels, the medical corps will be able to dedicate itself anew to higher aims.

Evils of State Medicine for the Doctor.—1st. The freedom of our profession will be lost. (This liberty has been lost for a long time. Many confrères, says Lick, prefer being "sanitary police agents of the state" to being police agents of the panel.)

2d. Bureaucratic life will surely be a terrible prospect for every doctor who loves his profession and his patients.

3d. The doctor will become an importunate beggar for position and preferment.

4th. The professional worth of physicians will diminish when they are regimented, socialized, and reduced to being functionaries.

5th. The medical profession will divide itself into two camps: Employees of the state, and independent doctors. Those who are employees of the state will be regarded as second-rate doctors. (We have had that differentiation for a long time, says Lick.)

6th. Regimentation will constitute a danger for the scientific independence of medicine.

Advantages to the Insured from State Medicine.—1st. The right to medical care is maintained, but following the disappearance of the system of mass distribution of medical care each patient will be more correctly and minutely cared for.

2d. Simulation of illness will diminish for the malingerer will receive less consideration.

3d. Assessments will diminish in like manner.

Evils of State Medicine for the Insured.—1st. The confidential medical adviser freely chosen by the patient will disappear. The friend will be replaced by the cold official.

2d. Patients will be considered more objectively, hence with more severity.

3d. The medical officer will feel himself rather the superior than the friend of the patient.

After having thus weighed the *pros* and *cons*, Dr. Lick admits that the socialization of the German doctor is practically accomplished now, and that there is only to choose between the fact of being an "employee of the state" or an "employee of the panel." The regimentation of medicine does not seem to him to be an ideal for the day when state institutions to provide against eventualities shall embrace all citizens from birth to death—that day will mark the end of vigor of mind, sense of personal responsibility, of all spirit of progress. For him the regimentation of doctors is only an expedient, but an expedient indispensable till the period arrives when we can again do without social insurance.

The real aim should be to reform the working man so gravely threatened in the social sphere into *free citizens* responsible to themselves—citizens who

will have no need for either insurance schemes or sanitary officers. People think they are doing fine things in organizing dispensaries; let them then build, first, adequate and healthful homes for the working man and many of the dispensaries will not be needed. They think they are doing marvelous things in creating insurances for one thing after another; fundamentally, all that is only superficial and symptomatic treatment—it is not a therapy based on etiology. This will only be possible when the directing classes shall become aware of their social obligations and act accordingly. It is the noble duty of the doctor to fight on this battlefield as a champion.

1930 Meeting Date Selected

The 1930 meeting of the West Virginia State Medical Association will be held at White Sulphur Springs on May 20–22, inclusive. This date was tentatively fixed by the program committee several weeks ago, and has just been confirmed by Dr. Walter E. Vest, president-elect for 1930, and by the Greenbrier Hotel at White Sulphur. Announcement of the date was authorized by Dr. Vest.

The 1930 meeting date was selected only after careful consideration, and it was thought that the three days of May 20, 21, and 22 were the best available. The date for the American Medical Association meeting next year in Detroit is fixed for June 23–27, inclusive, and it was deemed wise to set the date for the West Virginia meeting as far in advance of the A. M. A. meeting as possible. The date of May 20–22 does not conflict with any of the known commencement dates and is far enough advanced on the calendar to assure pretty weather.

The dates of May 20–22 fall on Tuesday, Wednesday, and Thursday. According to tentative plans, the state meeting will get under way at 10 o'clock on the morning of May 20, and will come to a close at noon on May 22. On Monday, May 19, the business meetings of the council and house of delegates will be held.

Proposed Amendments

At the Martinsburg meeting of the West Virginia State Medical Association last May there were five amendments to the constitution and by-laws proposed by Dr. C. A. Ray of Charleston. These amendments will come up for final action at the White Sulphur meeting next year. The present set of by-laws provides that each amendment, before it can be voted upon, must be published in the WEST VIRGINIA MEDICAL JOURNAL at least twice during the year that the amendment is on the table. The amendments proposed by Dr. Ray are consequently published herewith:

"Section 1. The officers of this association shall be a President, three Vice-Presidents, an Executive Secretary, a Treasurer, twelve Councillors to be elected as provided in Section 2, and two Councillors-at-large, who shall be the retiring President and his immediate predecessor.

"Section 2. The officers, except the Councillors, shall be elected annually. The terms of the Councillors shall be for two years, one-half being chosen each year. No Councillor shall be eligible to succeed himself after four years as Councillor, but may be elected after two years' absence from the Council. All these officers shall serve until their successors are elected and installed.

"Section 3. The officers of this association shall be elected by the House of Delegates on the evening of the first day of the annual session, immediately following the President's address.

"Section 4. The retiring President shall be Chairman of the Council for the year following his term of office, and shall not be eligible thereafter for any elective office of the association except for delegate to the American Medical Association or Board of Publishers.

"Section 5. The President, the three Vice-Presidents, and the Treasurer of this association shall be members of the House of Delegates by virtue of their respective offices."

Morgantown Health Conference

The fourth annual conference of the West Virginia Public Health Association and the county health officers will be held in Morgantown on November 26–28, 1929, and plans for the gathering are practically completed. The meeting is an annual affair, combining the county health officers' conference with the public health session. Among the principal speakers will be Dr. F. J. Grumbine of New York, director of the American Child Health Association; Dr. R. H. Riley, state health commissioner of Maryland; Dr. John E. Monger, former state health commissioner of Ohio, and Dr. Harry M. Hall of Wheeling, president of the West Virginia State Medical Association.

A feature of this year's health conference will be an intensive course on maternal and infant welfare which will be given for public health nurses on November 25 and 26. It is understood that thirty-

three reservations for this course have already been made, and it is expected to be one of the most popular aspects of the meeting. The course will be given by representatives of the American Child Health Association of New York.

The meeting itself will open on Tuesday morning, November 26, with Dr. W. H. McLain of Wheeling, president of the association, presiding. The meeting will break up into sectional gatherings on that morning for the nurses, county health officers, public health workers, sanitary engineers, child health division, and the other branches of public health work. Following the sectional meetings, the joint conference between the public health workers and the county health officers will be in order for the remaining days of the three-day session.

All of the meetings will be held in the Elks' Club building in Morgantown and the annual banquet will probably be held there on Tuesday evening, November 26. The meeting will come to an end at noon on November 28, and it is understood that many of those in attendance will remain in Morgantown for the Thanksgiving Day football game that afternoon between West Virginia University and Washington and Jefferson College. The meetings of the West Virginia Public Health Association are becoming more popular each year, and the Morgantown gathering on November 26–28, inclusive, is expected to be one of the best in the history of the organization.

Conference of Secretaries

Some four or five years ago it was the custom of the West Virginia State Medical Association to hold an annual conference of all county society secretaries in Charleston. Such a conference was then, and still is, permitted by the constitution and by-laws of the association. These conferences were usually held either the last week in December or the first week in January.

These conferences of county society secretaries will be renewed this year and, while the exact date has not been set, it is understood that the 1929 conference will be held on some date between Christmas and New Year. Work has already been started on this conference, and an interesting and instructive program is being arranged. The December conference will be held on the same day that the year-end council meeting is held, the council meeting occupying the morning and the secretarial conference taking up the afternoon.

In granting this year's request for a conference of secretaries, Dr. Harry M. Hall of Wheeling, president of the state association, said he thought it would be one of the most important and valuable meetings that could possibly be arranged. Dr. Hall pointed out that the conference would be an invaluable aid in drawing the various county societies into a more closely-knit organization, that it would give the county society secretaries a first-hand impression of the work of the state association, and that it would create an excellent opportunity to formulate plans for the anticipated legislative battles of 1931. He felt that this legislative work should be started during the primary election campaign next spring, when the state senators and delegates will be elected to the 1931 legislature.

Both Dr. Hall and Dr. Walter E. Vest, of Huntington, president-elect of the state association, will be in attendance at the conference of secretaries in December. An effort is now being made to secure one outstanding speaker of national reputation in the field of organized medicine for the conference program. It is understood, however, that the remainder of the program will be made up from the list of county society secretaries in West Virginia and that round-table discussions will be the order of the day.

Arrangements are also being made at the present time for a noon dinner in honor of the council members and the county secretaries to mark the recess between the year-end council meeting and the secretarial conference.

West Virginia Honored

For the first time in a good many years, the West Virginia State Medical Association will be represented on the program of the national conference of secretaries and editors, which will be held at the headquarters of the American Medical Association in Chicago on November 15 and 16, 1929. Dr. Harry M. Hall, of Wheeling, president of the state association and associate editor of the WEST VIRGINIA MEDICAL JOURNAL, has been asked to read a paper at that conference on a subject of his own choosing.

The Chicago conference of secretaries and editors is an annual event on the A. M. A. calendar and is one of the most important meetings of the year. Practically every state and every state medical association in the United States is represented at this two-day conference, where ideas and viewpoints are expounded and exchanged.

Examination of Immigrants

Diseases and defects for which aliens wishing to enter the United States are examined are discussed and some experiences of the examining physicians are cited in the October issue of *Hygeia* by Dr. Louis Schwartz. The conditions for which immigrants are examined are divided into three classes.

Class A includes persons with mental defects, loathsome contagious diseases and dangerous contagious diseases. Such persons are mandatorily excluded from entrance into the United States.

Under Class B are all diseases and physical defects that will materially impair capacity for self-maintenance, such as heart disease, hernia, marked defective vision and deformities. Immigrants certified as having Class B defects may be admitted at the discretion of the immigration authorities, either under bond or even without bond.

In the third class are included such minor defects as cross eyes, flat feet, bow legs and scars, none of which usually debar an alien.

The diagnoses most often appealed from and those most often fought in the courts are cases of feeblemindedness, mental defects and insanity, Dr. Schwartz says. It is often difficult to make these diagnoses. When large families come in for examination the normal members will keep a feeble-minded one in the background and have some other member answer the questions addressed to him. For this reason each member of a large family is examined alone when mental deficiency is suspected.

In the mental examination of adults suspected of feeblemindedness, information is first obtained concerning the applicant's knowledge acquired in everyday contacts. The trained examiner of immigrants always bears in mind the kind of community and environment from which the immigrant came. Some peasants do not even know the names of the days of the week. They do not know what year it is, and they may not know the names of what are, to us, ordinary articles of furniture and wearing apparel. They may regard as educated those among them who can write their names.

Marmola Takes the Air

The Marmola people, who have, upon more than one occasion, run afoul of the Federal Trade Commission, due to the nature of their anti-fat advertising, have just branched out into a new line of enterprise. They have taken to the air and, it is understood, are giving advice by radio to those members of the fair sex who would reduce their figures from hefty to medium and from medium to slight.

The Marmola advice was first heard several weeks ago over an occasional smaller station and did not seem to be nation-wide. Several days ago, however, they were heard over Station KWKH of "Hello, World" fame, which is the Henderson station at Shrevesport, La. The Henderson station at Shrevesport is one of the best known in this country.

The history of the Marmola concern is well known to most medical men and will not be brought up for discussion at this time. It is enough to say that Marmola has been exposed upon various occasions by the bureau of investigation of the American Medical Association; that it has had its ups and downs with the Federal Trade Commission, and that the most consistent thing about Marmola is the trade name itself.

Malpractice Insurance

At the request of a number of county society secretaries, who have asked for information concerning the Martinsburg resolution to do away with the association's medical defense fund, the state headquarters in Charleston recently brought to light some interesting facts on the number of association members who carry malpractice insurance through the regularly incorporated insurance companies operating in this state. The figures were obtained from the Ætna Insurance Company, which concern handles about 90 per cent of the malpractice insurance now in force in West Virginia.

According to figures furnished by the Ætna company, there are 521 members of the association now carrying malpractice insurance. This number represents approximately 50 per cent of the total membership. All of these policies have been taken through group rates issued to the various county societies, and it is impossible for any doctor to obtain this malpractice insurance unless he is a member of his county society and of the West Virginia State Medical Association.

Because of an apparent misunderstanding concerning abolition of the medical defense fund, the JOURNAL reproduces the facts herewith relating to the resolution offered at Martinsburg. The resolution in question was offered by Dr. C. A. Ray, of Charleston, on the morning of May 23, before the meeting of the house of delegates and with the unanimous consent of the delegates present. The names of the delegates in attendance at this meeting

can be found on page 439 of the July, 1929, issue of the WEST VIRGINIA MEDICAL JOURNAL, and the resolution itself can be found on page 440 of the same issue. The resolution reads:

> *Resolved*, that the by-laws be amended by striking out Chapter XI, with all its sections referring to medical defense, and on and after December 31, 1929, all funds remaining in said defense fund be transferred to the general fund of the association; that all cases now pending and all others that may arise against members of the association before that date shall be defended and paid as heretofore provided for in this Chapter XI.

It has already been pointed out that the resolution was offered with the unanimous consent of the delegates present and was passed without a dissenting vote.

Coming back to the question of malpractice insurance, it has been stated that there were 521 policies now in force in West Virginia. According to the Ætna figures, the division by county societies of the policies in force is as follows:

Cabell	55
Eastern Panhandle	15
Fayette	16
G.-H.-H.-M.	10
Greenbrier Valley	18
Harrison	47
Kanawha	68
Logan	22
Marion	36
Marshall	19
McDowell	32
Mercer	35
Mingo	14
Monongalia	21
Ohio	59
Parkersburg Academy	29
Raleigh	25

The Membership Status

The question is often asked, "How is the state medical association coming along?" To those interested in the answer to this question, it can be said that the scope of activities of the association is wider than ever before, that the membership roster contains more names than it has ever held in the past, and that the list of delinquent members is smaller than it has been at any time during the past ten years. The work of the state association is progressing nicely.

WOMAN'S AUXILIARY

Harrison County

The Woman's Auxiliary to the Harrison County Medical Society held an interesting luncheon at the Dolly Madison tea room in Clarksburg on October 3. Mrs. J. P. Lilly, state president, and Mrs. Brinley John, secretary, both of Morgantown, were the honor guests of the occasion.

The Harrison county auxiliary is planning to coöperate with the county superintendent of schools in an effort to establish the serving of hot lunches in the junior high school of Clarksburg.

Kanawha County

A benefit bridge to raise money with which to purchase *Hygeia* subscriptions for county schools was given by the Woman's Auxiliary to the Kanawha Medical Society at the Woman's Club building, Charleston, on the evening of October 11. Approximately $45 was realized from this function, and 45 subscriptions of six months each have been purchased for Kanawha county's rural schools. It was pointed out that it was better to purchase subscriptions for six months rather than for the full year, inasmuch as most of the rural schools are in session only six months during the year.

An interesting meeting of the Kanawha Auxiliary was held at the home of Mrs. B. S. Preston in Charleston on the evening of September 24. At this meeting Dr. R. H. Paden, of the child hygiene division of the state health department, gave an instructive talk on the work of his department.

Monongalia County

The Woman's Auxiliary to the Monongalia County Medical Society gave a benefit bridge party on September 10, 1929, at the Morgantown country club, for the benefit of the children at the Eastmont Tuberculosis Sanitarium. The party was very successful and many articles were purchased to bring happiness and comfort to the children.

A committee from the Monongalia Auxiliary is making a survey at the present time of the school children throughout the county, to determine the number of pupils who are retarded through physical defects and through defective vision. A number of interesting facts have been brought to light, leading the Monongalia Auxiliary to believe that much good could be accomplished if other county auxiliaries would become interested in the same work.

The West Virginia Medical Journal

Directed and Edited by the Committee on Publication

[The Committee on Publication is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible]

JAMES R. BLOSS, *Editor-in-Chief* - - - - - - - - Huntington

ASSOCIATE EDITORS:

WALTER E. VEST, Huntington — HARRY M. HALL, Wheeling — J. HOWARD ANDERSON, Marytown — C. A. RAY, Charleston

MR. JOE W. SAVAGE, *Secretary-Business Manager*, Charleston

Entered as Second Class Matter, January 1, 1926, at the Postoffice at Charleston, West Virginia

Vol. XXV — DECEMBER, 1929 — No. 12

MODERN METHODS OF DIAGNOSIS IN GASTROINTESTINAL DISORDERS *

By RAY C. BLANKINSHIP, M.D., F.A.C.P.

Associate Professor of Clinical Medicine, University of Wisconsin

Madison, Wis.

In our present-day methods of diagnosis I wish to call your attention at the outset to several pertinent facts: First, the practice of medicine is both an art and a science, and progress can not be made except through adequate consideration of both. Second, medicine is not now, and never will be, purely an exact science. Third, the prevailing practice is to emphasize science and minimize art, so much so that the latter has almost reached the vanishing point. Even the science as practiced is too often not science but slipshod routine. For example, think for a moment of the number of x-ray films that are truly spoiled through errors in technique but upon which a clinical opinion is given. A terse sentence often found in the literature on any scientific medical subject reads like this: "Errors in diagnosis are usually due to (1) incomplete examination, or (2) improper interpretation of findings." This is true, of course, and applies, as I shall later illustrate, in the diagnosis of functional or organic disease of the gastrointestinal tract as well as in any other system of the body. My purpose in discussing this subject is chiefly to indicate the value of the many different methods of precision now in vogue. The complete history and the thorough physical examination are always necessary, and their importance should in no way be underestimated. There is, however, a great popular tendency, in private practice as well as in diagnostic clinics, to skim hastily over both and to seek a quick and definite diagnosis through the use of one or more direct objective tests. Such practice is the most common and inexcusable fault in the use of our modern diagnostic armamentarium, and is clearly a sign of decadence rather than progress. The x-ray is merely an aid to diagnosis, and in most cases not even this, unless the examination is made by an expert. Under no other circumstances should an opinion given by a röntgenologist serve as a basis for treatment. X-ray is rarely used too much, often, however, too unintelligently.

The gastrointestinal series is almost indispensable in the thorough study of any subacute or chronic digestive disturbance. Aside from gross lesions—ulcers, strictures, diverticuli, etc.—in the esophagus, stomach and duodenum, the size, position and contour of the various organs, as well as the motor activity, can not be determined so accurately in any other way. The fluoroscopic is the most important part of the examination and it is frequently desirable for this to be done in both the upright and the recumbent position. The location of the barium meal at the end of six, twenty-four, forty-eight, and seventy-two hours is of relative importance and tells

* Read before the Eleventh District meeting, Solon Springs, Wis., August 12, 1929. Published simultaneously with the *Wisconsin Medical Journal*.

us chiefly what is obvious, namely: the time it takes the barium to pass through the gastrointestinal tract and its position at various hours. Too much should never be read into stasis plates on the colon because through mixture with bowel contents, gross distortions, which are apparent rather than real, may often be observed.

To study the lower bowel through x-ray, one should always give a barium enema, as I have previously described.[1] This, when properly done, will definitely reveal the size, position, and contour of the colon and will also show any filling defects which may be present as well as any major or minor change in haustral markings. These changes may mean a great deal when the interpretation is tempered with clinical experience and judgment. Localized areas of dilatation or redundancy are often observed, and such anomalies may materially influence the later management of the case. While the diagnosis of appendicitis normally is not to be made through the use of x-ray, if, during the course of stasis studies or following a barium enema, the appendix is actually visualized under the screen and ran be demonstrated to be abnormal in size, position, or mobility, or if definite localized tenderness can be elicited, then the x-ray is of some value; otherwise, it is not.

The gastric analysis is of diagnostic value chiefly to eliminate the question of achlorhydria, which is always mportant in any type of chronic digestive disorder, even though symptoms may not be directly referable to the stomach. To plot a curve illustrating the course up or down of free acid during the normal digestive phase is not only a waste of time but it is bad practice, since it furnishes neither the physician nor the patient with any information of importance. At times it may be of clinical value to determine the secretory activity of the stomach in terms of volume. This can conveniently be done by the method of Bloomfield and Keefer,[2] or, more simply, by aspirating the gastric contents at a time when the stomach normally should be empty. The determination of free acid is not as simple as it might at first seem, owing to an apparent inaccuracy in the reagent (Topfer's) usually used. To prove the presence of free acid this reagent should give a vivid rose color when applied to the *filtered* gastric contents. It is possible, upon immediate examination, to get a positive test which will be negative after filtration. This is as yet unexplained, but is now being investigated. If, after an Ewald meal, this positive test is not obtained, the patient should be reëxamined after histamine as recommended by Matheson and Ammon,[3] Dobson,[4] and others. No case should be classified as achlorhydria on the basis of a negative test after a fifty-minute Ewald meal, nor even after a fractional gastric analysis, as is often done.[5] Such practice gums up the literature and vitiates observations based upon more accurate studies. The histamine test is simple, safe, accurate, and dependable. If a patient shows no free acid after this test, the chances are that he will never again show a positive; and, moreover, keeping such a case under observation (for the possible later development of pernicious anemia) over a period of years is of great importance. The presence of lactic acid and occult blood in the aspirated gastric contents usually means nothing.

X-ray studies of the gallbladder are, to my mind, still in the developmental stage, particularly in relation to cholecystographic lndings. In all cases of suspected gallbladder disease, it is wise to take a flat plate of the upper right quadrant without dye as a preliminary routine. The dye test, as you all know, has been extremely popular; but I am convinced that through uncontrolled (if not uncontrollable) variables this test may not only fail to be of assistance but it may lead to erroneous conclusions and unwarranted surgery. Even Cole[6] admits that we have not yet found the right drug—certainly not in tetraiodophthalein. In the first place, to have this dye given routinely through the vein by the average interne staff is not a justifiable practice. Venous thrombosis and unavoidable systemic reactions are entirely too common except in the most skillful hands, and, as a rule, hospitals and diagnostic clinics do not have facilities in operation to obtain the required perfection in technique. Furthermore, even with unusual excellence in the technical administration of the dye, the end result and final reading in so many cases leaves the clinician just where he was before, or, worse, may lead the surgeon too hastily into the abdomen. Two weeks after Graham and Cole[7] first completed their preliminary studies, I started to use the dye test. After using all of the different dyes which they have recommended, both by mouth and intravenously, I have entirely abandoned the intravenous route except in the unusual case. Plain capsule without any keratin, or else an emulsion or a solution of the dye, has proven most satisfactory for routine use. If, by this method, definite deformity is seen, or if stones are demonstrated, then it is worth while. The gallbladder may fail to fill, however, without any disease of the organ. It may

fail to contract normally, whatever this means, and still be a harmless gallbladder. I should especially like to stress one point in relation to cholecystography, namely: the result of the test in itself should never be the deciding factor for or against surgery. If this is conceded to be a just observation, then I should like to see the test immediately take a secondary position, where it naturally belongs in the diagnosis of gallbladder disease.

The modern proctoscope is an instrument which is very easy to use and which merits more universal application. It is often a valuable aid and is at times the only possible method by which an accurate diagnosis can be made. In the differential diagnosis of colitis, visualization of the mucous membrane of the recto-sigmoid plus the microscopic examination of a smear taken directly from the mucosa, for pus, gives conclusive evidence. There could certainly be no more simple nor direct method of determining the presence or absence of an inflammatory condition of the colon. If, during the course of the sigmoidoscopic examination, a growth is found, a biopsy can be immediately taken. Also, if ulcers are found, smears may be taken for the direct examination for amœba—and this should always be done in the presence of acute symptoms referable to the colon. In chronic cases where amœbiasis is suspected, a warm-stage examination is not necessary, but the collected stool should be examined by some one familiar with the behavior of encysted forms of amœba for amœbic cysts. It is not unusual to find, in the type of cases which is popularly called spastic colitis, on adequate examination, either the harmless amœba coli or the amœba histolytica. The latter is never a harmless organism and differentiation is naturally very important.

It is furthermore highly desirable, in the study of any bowel case, for the physician to see the gross specimens of the stool. I have found this extremely valuable, and make it a routine practice in all cases of diarrhea. In this manner one can immediately see not only the consistency of the stool, but also the presence or absence of undigested food, excess mucus, changed blood, etc. The routine microscopic examination should include a diligent search for ova, parasites, and amœbic cysts. More than one examination is necessary and it is oftentimes desirable to go further and determine (1) the presence or absence of free fat droplets or starch granules, (2) the character of the flora as determined through culture, and (3) the findings on microscopic examination of material collected directly from the mucous membrane through the proctoscope (immediate examination for motile forms of amœba, later examination of a smear for pus; biopsy). Gross blood in the stool is of great importance and its source should always be determined. Occult blood might come from so many different sources that its presence is of little or no value. This is certainly true unless all of the common sources for blood have been eliminated. By this I mean not only the food ingested, but also the gums, the post-nares, and lesions in or about the anus.

Now that I have briefly scanned the more common direct approaches to diagnosis, an important point which I wish to bring out can probably be done best through illustrations.

Miss E. F., age 26 years, gave a history of diarrhea, starting acutely during a tour of Italy last fall. Shortly after this, while in northern France, the diarrhea stopped, but returned again and continued up to the time of examination in May of this year. There had been some colicky pain, never of severe character and never of long duration; nor was it ever localized. Stools numbered three to five daily with a rare-formed stool, most of them being of mushy or liquid character. Naturally, parasites were given first consideration, and examination was made both for the encysted forms of amœba and for the motile organisms over a warm stage. Both were negative. The stools were also negative for typhoid and paratyphoid organisms and for bacillary dysentery. A smear taken through the proctoscope, at which time the mucous membrane was demonstrated normal, showed no pus. The next step was the barium enema, which was also negative. Gastric analysis showed no free acid after Ewald meal, but an abundance of free acid after histamine. The gastrointestinal series from above revealed no abnormality in the stomach other than hypermotility, and it was noted that at the end of six hours the barium meal had reached the recto-sigmoid. A working diagnosis of vagatonia with colon spasm (not spastic colitis, because there was no inflammation) was made and the patient was given bromides, a smooth diet, and was discharged. The original loss in weight of fifteen pounds continued, and, while the number of formed stools decreased, the diarrhea still persisted. A dental x-ray showed a huge abscess over one of the bicuspids—so large that it also involved the cuspid. These teeth were removed with no apparent change in symptoms—at least not for the first few weeks. Further study of this patient gave added weight to the accuracy of the original im-

pression. She was highly intellectual, acutely subject to excitement and suggestion, and was surrounded by an oversolicitous family. As a last resort she was put to bed at home under the supervision of a private nurse. With no other treatment and no dietary restrictions, recovery under this régime was prompt and complete.

The important point here is that, while we had to utilize many different methods of precision for purposes of elimination, the end result was dependent upon ordinary clinical judgment unassisted by any positive laboratory test.

While the prevalence of functional disorders is well known, the exact mechanism of development is in most cases but little understood. Alvarez,[8] in a recent article, called our attention to the effects of the emotions on the gastrointestinal tract. When our intellect is stirred, we are immediately aware of such factors; but normally we seem to be too intent upon grasping a gross pathological entity to recognize the many functional disturbances which may precede pathology.

To illustrate another point: Mrs. F. W., age 35 years, housewife, entered an institution for diagnosis on the 15th of March, 1927. She stayed there one week. The complaints (13 years' duration) were constipation, gaseous distention of the bowels, and at intervals vague, colicky pains all over the abdomen. Occasionally she had seen small amounts of blood and mucus in the stools, especially after a severe period of constipation, and at rare intervals a mild diarrhea lasting one or two days had been noted. The appendix had been removed. The laboratory work done at that time was as follows: Routine blood and urine tests, blood Wasserman and blood chemistry, sinus and dental x-rays, gastrointestinal x-rays, stereoscopic x-ray of the chest and lipiodal insufflation into the fallopian tubes. The final diagnosis on the record was "redundancy of the transverse colon." (*Note:* No gastric analysis was done and there was no stool examination, and yet the complaint was almost entirely gastrointestinal.)

This patient was referred to me in November, 1928, with the same symptoms. A little more stress, however, was placed upon colicky abdominal pain, and there had been some nausea and vomiting at irregular intervals. Analysis of the stomach contents after 50-minute Ewald test showed no free acid. The same after a 2-hour fractional. Histamine test was done; still no free acid. Stool examination was negative for amœbic cysts, ova, and parasites. Proctoscopic examination showed fairly normal mucous membrane throughout with considerable excess mucus and internal hemorrhoids. A smear taken from the sigmoid showed both pus and blood. Now note the difference in the conclusions with nothing more than thoroughness added to the original study. The diagnosis is achylia gastrica, mucous colitis, postoperative abdominal adhesions, and hemorrhoids Let me again emphasize what President Doege has recently stressed through the *Wisconsin State Medical Journal*,[9] namely, the importance of a complete diagnosis.

Conclusions.—1. Obscure gastrointestinal cases may require the use of every known technical method of investigation.

2. It is frequently necessary to study the more distant parts of the body (urinary tract, pelvis, and the common points of focal infection).

3. When methods of precision are used, expert technique and experience in interpretation are imperative.

4. Diagnosis must be rational, and the results of studies in the laboratory must not lead us in an attempt to fit the patient to a particular disease, but must be viewed merely as a part of the whole clinical picture.

5. Correlation of findings by one head is a too much neglected phase of diagnosis.

6. Functional disorders are a more fruitful source of symptoms than organic diseases.

7. The volume and momentum of scientific investigation is bringing about disorder in this branch. We are much in need of more accuracy in the *science* and more diligence in the *art*.

REFERENCES

1. Blankinship, R. C.: Colitis, Chronic Non-Specific. *Wisconsin Med. Jour.*, November, 1928.

2. Bloomfield and Keefer: Clinical Studies of Gastric Function. *Journal A. M. A.*, 88: 707, March 5, 1929.

3. Matheson, A. R., and Ammon, S. E.: Observations on the Effect of Histamine on the Human Gastric Secretion. *Lancet*, 1: 482-483, March 10, 1923.

4. Dobson, H. V.: Effect of Histamine on Gastric Secretion. *Journal A. M. A.*, Vol. 84, No. 3, p. 158.

5. Schneider, J. P., and Cory, J. B.: Clinical Significance of Primary Achlorhydria. *Journal A. M. A.*, 91: 1763-1768, Dec. 9, 1928.

6. Cole, W. H.: Cholecystography and Simultaneous Hepatic Function Tests. *Journal Med.*, Vol. 9, No. 6, p. 233.

7. Graham and Cole: Roentgenologic Examination of the Gall-Bladder. *Journal A. M. A.*, Vol. 82, No. 8, p. 613 (Feb. 23, 1924).

8. Alvarez, W. C.: Ways in Which Emotion Can Affect the Digestive Tract. *Journal A. M. A.*, Vol. 92, No. 15, p. 1231.

9. Doege, Karl W.: Early and Late Diagnoses—Present and Complete Ones. *Wis. State Med. Jour.*, July, 1929, p. 320.

BLOOD TRANSFUSIONS IN THE SEPTICEMIAS *

By C. L. WOODBRIDGE, M.D.
Montgomery, W. Va.

In somewhat less than twenty-two months, 207 transfusions of unmodified blood have been performed in the Coal Valley Hospital. Of this number 33 have been performed on patients part or all of whose symptoms have been caused by septicemia.

Septicemia is defined as a morbid condition due to the presence of pathogenic bacteria and their associated poisons (toxins and tox-albumins) in the blood. Toxemia is defined as blood poisoning: poisoning by toxins produced in the body cells or by the influence of microörganisms. Bacteremia is the presence of bacteria in the blood. I give these definitions not to cloud the issues before us but merely to center our attention on that phase of the subject most interesting to us, *viz.*, the bactericidal value of human blood.

Our first lesson in surgery was the absolute necessity, in localized abscesses, of free incision and adequate drainage. In general infections the optimum treatment is rest, adequate elimination, and supportive measures. When the blood contains a large number of pathogenic bacteria, what should be the line of treatment? Are eliminative and supportive measures adequate?

Erlich had as his desideratum the injection of one enormous dose of a spirocheticide for the eradication of the organism throughout the body and the cure of syphilis in one treatment. Many other intravenous medicaments are being recommended by various workers for the sterilization of the infected bloodstream. Among these may be mentioned intravenous iodine, formalin, solfumin, cuprocollargol, septacrol, and alcohol. The two most famous substances used are gentian violet against gram negative organisms and mercurochrome against gram positive organisms. I have not seen any good effects following the use of gentian violet intravenously. A former professor of mine, Hugh Young, was the originator of mercurochrome. He is a genius in urology. However, I feel that the intravenous use of mercurochrome has been greatly overestimated. I am under the impression that the intravenous use is fortunately descending into innocuous desuetude. We have all seen miraculous results following the use of this substance intravenously. I recall a man, in China, with a probable streptococcemia from an infected arm, who, in my opinion, would certainly have expired had he not received a large amount of intravenous mercurochrome. Doubtless others here can recall similar instances in their practices. Nevertheless, we know that this drug, in the dose recommended (5 milligrams per kilo of body weight), is very toxic and a rather dangerous therapeutic agent. I, perpersonally, do not believe mercurochrome should be used against septicemia unless the patient is in a condition such as would lead experienced consultants to predict that death was almost certain and that extreme measures were justified.

At the present time, it seems that unmodified human blood is the optimum therapeutic agent in septicemia. A number of reasons may be mentioned, among them the following:

First: Human blood is known to be an excellent germicide.

Second: It may be given frequently in large amounts.

Third: When properly administered, it is probably less dangerous than most of the chemicals.

Fourth: It has a number of beneficial by-effects, such as the aiding in the combating of shock, toxemia, anemia, etc.

Given a patient suffering from streptococcemia, we are all familiar with the clinical picture: hyperpyrexia, tachycardia, extreme prostration, but often mental alertness, and a very grave prognosis. May we not advantageously use human blood in addition to other measures that have deservedly stood the test of time?

May I briefly present the salient points in three cases treated at this hospital?

CASE I.—A Czecho-Slovakian, aged 32, injured while in a mine, was treated by his physician for a painful disability of the left hand, but nine days later it was deemed advisable to send him to the hospital. On admission his temperature was 102°. The diagnosis was: Lacerated wound of the left hand with complicating infection and spreading lymphangitis. Urinalysis was negative. There was leucocytosis, the hemoglobin was 80%, red blood cells were 4,200,000; Meinicke was negative. Temperature ranged from 101.2° to 104°. Incision and drainage was done. This seemed to be a case of streptococcemia originating from infection of the laceration of the hand. In addition to the routine treatment, the sixth day after admission a transfusion of 500 c.c. of unmodified blood was done by the direct method, the donor being a New River

* Read before the Fayette County Medical Society, October 8, 1929. From the Montgomery Clinic and Coal Valley Hospital.

State College student. Following the transfusion there was some improvement in the general condition. On the eleventh day after admission, a second transfusion of 600 c.c. was done, a friend of the patient acting as donor. Following the second transfusion there was a striking improvement in the general condition of the patient, and he left the hospital twenty-six days after admission.

CASE II.—A white girl, aged 20, admitted to the hospital on the medical service, with typhoid fever. The Widal was positive, the Wasserman negative, white blood cells 7,400, hemoglobin 88%. The urinalysis showed a slight cloud of albumin and an occasional hyaline cast. Blood culture five days after admission was positive for the typhoid bacillus. In addition to the routine treatment, nine days after admission she received a transfusion of 250 c.c. of unmodified blood from a professional donor, and the next day a second transfusion of a similar amount, also from a professional donor. Following these transfusions there was an astounding, though temporary, reduction of the hyperpyrexia, and the patient left the hospital thirty-seven days after admission.

CASE III.—A white man, aged about 35, while shoveling, injured his right knee. Twenty-four hours later the knee began to swell; six days later he was admitted to the hospital with a diagnosis of traumatic synovitis with spreading lymphangitis. The urinalysis showed a cloud of albumin, many hyaline and granular casts, and the hemoglobin was 90%. The patient received anti-streptococcic serum and an incision was made and drains placed, but the cellulitis continued to spread. A second incision was made. Blood culture showed the staphylococcus aureus. Six days after admission the hemoglobin had dropped to 70%. The next day there was epistaxis estimated at 1,000 c.c. The day after the epistaxis, a transfusion of 630 c.c. of unmodified blood was done, using a donor from the New River State College. Later in the day, a second transfusion of 630 c.c. was done, using a second student. A week later, a third transfusion of 350 c.c. was done with a third student. A third operation was performed, followed by a venesection transfusion, 275 c.c. being removed and 500 c.c. injected. The general condition of the patient improved and he was discharged.

In conclusion, it is believed, in general, in addition to attempting to eradicate the local wellspring of infection in cases of septicemia, that it is a salutary and progressive procedure to attempt by transfusions of unmodified blood to eradicate from the bloodstream the causative pathogenic organism.

INFECTION OF THE NASAL ACCESSORY SINUSES *

By EDWARD A. LOOPER, M.D.
Baltimore, Md.

Infection in the upper respiratory tract is the most common cause of many general diseases. The profuse development of lymphatic glands in this region indicates nature's efforts to prevent invasion of organisms from the mucous membrane lining the nose and throat. The peculiar formation of the sinuses, which are pneumatic air spaces communicating with the nasal fossæ, afford ideal construction for the entrance and propagation of pathogenic bacteria.

A consideration of the nasal accessory sinuses requires a thorough understanding of their early development and anatomical irregularities.

The maxillary antrum is the first to appear, being present as a small cavity at the inner side of the orbit during the sixth month of fœtal life. At birth it is fairly well formed. Its subsequent development is downward, assuming full shape after eruption of the permanent teeth. The maximum size is attained between the fifteenth and eighteenth years.

The ethmoids are present at birth and develop in size with advancing years until puberty.

The sphenoidal sinus is merely a faint depression in the sphenoid bone at birth. Its real development begins at the end of the fourth month and generally increases in size until the sixteenth year.

The frontal sinus makes its appearance from the end of the first to the beginning of the third year. It develops slowly and is about the size of a pea between the sixth and seventh years. From the seventh to the ninth year it is recognized as a distinct cavity. The maximum development is reached during the nineteenth year, when it measures from 16 to 21 mm. in height and from 21 to 24 mm. in width.

Up until the last few years little consideration was given to the possibility of infection in the sinuses of children, because they were considered insufficiently developed to retain toxic material; but, as shown on the lantern slides, they are of considerable size even in early life, and increase with age.

Therefore, any condition which affects bony

---

* Read before the Eye, Ear, Nose and Throat Section of the West Virginia State Medical Association at Martinsburg on May 22, 1929.

development during the growing age will materially alter the size and shape of the sinuses and will be a fundamental cause in the etiology of later diseases.

The most important factor affecting the early growth and development of the sinuses is a properly regulated diet in infancy and childhood. It has been shown that the withdrawal of certain vitamins from food will retard bony growth and sinus development. Also, local tissue resistance will be so affected that infection is inevitable within these cavities. Therefore, in children who have repeated colds, it is our duty to determine the nature of the diet and to see that it is of the required composition.

This is our first step in prophylaxis. The present age is one of preventive medicine, and this applies to sinus disease as well as to any other condition. If by proper diet we can prevent early sinus infection, we have done much for the future health of our patient.

It is well known that early infection within the sinuses will retard their growth, forcing them to remain in an infantile form throughout life so that they are always in a lowered state of resistance, in which they are made vulnerable to recurrent infections. Even though this is common knowledge to laryngologists, it is not generally appreciated by the family physician, and it is our privilege to disseminate this knowledge to doctors as well as to the public, thereby doing our part in preventive medicine in this particular field.

Diagnosis.—By early diagnosis and the institution of conservative treatment, many extensive operative procedures can be avoided and serious complications can be prevented.

A careful history is very necessary in making an early diagnosis. Repeated nasal infections or so-called common colds lasting more than two weeks usually indicate some involvement of the sinuses. Discharge may or may not be present, depending upon the amount of drainage. In children the diagnosis is much more difficult because subjective symptoms can not be depended upon. Careful inquiry should be made to determine if a child has had measles, scarlet fever, diphtheria or whooping cough, as the exanthematous diseases are usually complicated by severe nasal infections and sinus involvement.

In adults, the acute cases usually present definite symptoms, such as pain, tenderness, headache, nasal discharge, and difficulty in breathing, which makes the diagnosis comparatively easy.

In chronic affections quite a different problem is presented. A certain number of cases show such definite local symptoms that a diagnosis is easily made, and this group gives us little trouble. It is the borderline case, with few, if any, helpful localizing symptoms, which gives us most concern. The cases in which the nasal symptoms are insignificant or are maske dby certain general symptoms of toxic absorption, so that attention is directed along other lines, are perplexing. This is especially true of cases which produce arthritis, indefinite rheumatic pains, digestive disturbances, malaise, headache, and vertigo.

Considering the anatomical structure and close relationship of the sinuses to other important structures, it is not uncommon that the most prominent symptoms come from these special organs. The most typical example is found in eye lesions, cranial involvement, and reflex nervous phenomena.

During the past three years I have seen an unusual number of patients who entered the hospital with a tentative diagnosis of some serious cranial lesion; some in a state of coma, several with convulsions, and all of them showing, in some way, distinctive manifestations of cerebral irritation.

In this group, which composed about twenty patients, a most careful physical and special examination was made to determine the cause of the trouble, and in all cases it was found that the symptoms were produced by absorption from a low grade and unsuspected sinus infection, the toxins resulting in a cerebral edema. All of the symptoms quickly cleared up with simple drainage, and the patients have remained cured.

A number of these cases were reported in detail at the last meeting of the Southern Section of the American Rhinological, Laryngological and Otological Society, at Greenville, South Carolina.

In the diagnosis of these obscure cases, every available aid is required and good x-ray plates are most important. When intensified by lipiodol they are still more helpful. While entire dependence should not be placed on an x-ray plate, it is our most reliable objective method of examination. A clear plate will reveal the shape and size of the sinuses if they are fully developed, infantile, or walled off by septa; the pathological state, if hyperemic, a thickened membrane or empyema, and it will show foreign bodies, teeth, etc., as well as single or multiple polypi, all of which are extremely important to know if proper treatment is to be carried out.

Every rhinologist should read and study his own x-ray plates. In my office I have my own x-ray equipment and find it very convenient as well as

COSMETIC RESULTS OF RADICAL FRONTAL SINUS OPERATION

satisfactory. Lipiodol injections can be made easily. Plates taken and developed by a technician can be presented to me in a short time for interpretation and study.

So, in every patient who gives a history of recurrent nasal infections, I make it a routine to have an x-ray of the sinuses, and it is surprising how many unsuspected cases are discovered which, if clinical symptoms alone were depended upon, would have been overlooked.

Transillumination is unsatisfactory at best, and can not be depended upon for accurate diagnostic purposes. Tenderness over the sinuses is not a constant symptom and is generally absent in the low-grade infections.

Bacteriological smears and cultures do not give us the desired information, because the upper respiratory tract is the natural habitation of many organisms, and it is difficult to say when an area is truly infected by this procedure.

We place most dependence upon examination of the intranasal structures for abnormal changes; but, unfortunately, in many of these cases it is impossible to determine the presence or absence of infection by the local appearance of the tissue. The nasal mucosa may seem to be normal, the breathing space unobstructed, the turbinates of regular size, with little change in nasal secretion, while the patient gives definite general symptoms of toxic absorption.

Treatment.—Before attempting the treatment of these conditions it is well to bear in mind the anatomical shape and position of the sinuses, for the location of the ostia is important for drainage purposes. The frontals being above, with their ostia anteriorly and below at the most dependent portion, it is easy for this sinus to drain—and this explains why it responds so well to local applications and suction treatment, if treatment is instituted early.

The antra bear a different relationship on account of their location, large size, and their ostia being located at the upper inner boundary, spontaneous drainage, when once filled with pus, is difficult. At best, no drainage can occur until the antral cavity overflows. With this infection, when the anatomical location is considered, you can appreciate why local astringent applications are of little use. The logical thing is to establish drainage at the most dependent part, and this can be done through the inferior meatus by a simple trocar. Unless this is done the condition becomes chronic, the antral cavity acts as a reservoir for pus, and in time the membrane becomes diseased, when more radical measures are necessary to effect a cure.

The ethmoidal labyrinth is very susceptible to infection, and, on account of its honeycomblike arrangement of cells, the infection is very difficult to eradicate after it has once obtained a foothold.

As the turbinates are so susceptible to hypertrophy and deviations of the septum are so common, they play an important part in the etiology and treatment of sinus diseases in this area, so that surgical measures are often necessary to obtain ventilation and free drainage.

Treatment is naturally influenced by the type of infection. It may be merely an acute infection which runs an uneventful course, or the case may be of a chronic nature which is difficult to cure and whic hrequires an extremely long period of treatment. Furthermore, in all cases the treatment may be of a palliative nature or operative procedures may be required.

Most of the acute cases respond quickly to treatment, and, as a rule, the prognosis is good. The local treatment consists in cleansing the nose with some warm alkaline solution such as normal salt or Dobell's solution, which frees the mucous membrane of secretions and a certain number of bacteria. After this, some astringent solution is applied, such as adrenalin or ephedrine and cocaine. This shrinks the congested tissue and allows a certain amount of drainage. This is followed by a bland, soothing, oily spray. In acute cases we are often able to help the condition with suction treatment. Steam inhalations of chloretone inhalant or ephedrine inhalant are soothing as well as beneficial.

The frontals, sphenoids and ethmoids are more amenable to local treatment than the antra. On account of the normal drainage channels being situated at the upper part of the antral cavity, it is perfectly obvious that drainage through this route is most difficult, for it is necessary that the antra be entirely filled before any fluid can be evacuated. Therefore, the best form of treatment is to make a puncture through the inferior meatus and irrigate the antrum with warm saline solution. This quickly eliminates the collected fluid and establishes drainage in the proper manner.

There is another type of sinus infection which is very common and is often associated with the acute sinus conditions. In this type the frontals are most frequently involved. It is known as vacuum frontal sinusitis, and is produced by congestion or hypertrophy in the upper nasal passages, so that the naso-

frontal duct is closed. The air is absorbed in the sinus and a certain amount of suction is produced, with resulting hyperemia of the mucous membrane. This causes excruciating pain and headache. The treatment consists of shrinking the congested mucous membrane or removing the obstruction by operation. This condition is similar to an acute catarrhal otitis media, and the principle of treatment is similar.

We should particularly direct our attention to the treatment of chronic diseases of the accessory sinuses, for these cases are often neglected. Many times the patients are given the impression that they have a so-called chronic catarrh which is incurable. It is remarkable how prevalent this opinion is among the laity, and many unfortunate victims are suffering when they might be helped by proper treatment.

Quite a number of these cases can be cured by local treatment, no operative procedures being necessary. In such cases we find suction very efficacious. Many times, however, no results can be obtained by local treatment, because the mucous membrane of the sinuses is so badly diseased that nothing short of extensive operations will eradicate the condition. This is often true in antral disease. Fortunately, most of the obstinate cases can be cured by a radical operation, the type of operation being influenced by the etiology and duration of the disease.

Most cases of frontal sinus infection can be cured by conservative intranasal surgery. The naso-frontal duct being at the inferior wall of the sinus, it is in position for easy drainage after obstructions, such as spurs, septal deviations or hypertrophied turbinates, have been removed.

There are a certain number of cases which resist all efforts of intranasal surgery to effect a cure. With this group some external procedure is required. In the purely chronic cases, there is usually sufficient time to choose and perform any one of the classical operations which the operator likes best.

In a small group, however, the development of symptoms and complications are so rapid that the quickest and safest form of drainage is required at once. At times it is difficult to decide just how extensive the operation may be in view of the fulminating infection. With the aid of lantern slides I wish to show you the results of five very serious frontal sinus cases, complicated by orbital abscess. The patients had alarming cerebral symptoms and marked exophthalmos, and required immediate drainage. The technique employed was, as far as applicable, along the lines employed by Dr. Lynch. The cosmetic result, you will note, is very good, and all of them were cured.

X-rays should be made in all cases of suspected sinus disease. They are helpful in making a diagnosis and essential before any operation. I have no statistics on the percentage of infection in the various sinuses.

ADVANTAGES IN TECHNIQUE OF THE MODIFIED LOTHROP OPERATION WITH THE KILLIAN PROCEDURE FOR THE CURE OF CHRONIC FRONTAL SINUSITIS *

By SAMUEL RUFF SKILLERN, JR., M.D.
Philadelphia, Pa.

I shall not go into great detail in explaining either the Killian or the Lothrop operations, as I am certain that every man present knows the essential points in these two radical methods of opening the frontal sinuses. I am going to deviate from the usual procedure in writing this paper and give you what we consider the advantages of the Lothrop technique, and then show the slides of the two operations for the comparison.

Let us first consider the relative dangers of the modified Lothrop and the modified Killian:

1. The Lothrop is by far the simpler operation, as there is less surgery to be done, consequently less time and anesthesia consumed, less shock to the patient, and only a moderate area of bone resection

2. The eye and its adjuncts are not disturbed, except for the cutting of the main channels of blood from the upper lid, which causes a moderate swelling and edema. In the Killian super-imposed upon the above trauma is the more or less constant pressure upon the orbit, the length of time and degree depending upon the amount of bone resection required for the inferior wall as well as the skill and dexterity of the assistant who is handling the retractors; the amount of edema of the eyelids, danger of paralysis of the upper lid, danger of injuring the eye and optic nerve, being in proportion to the amount of pressure used and manner of handling the retractors.

3. Danger of injury to the lachrymal duct with epiphora is ever present in the Killian procedure.

4. Continuation of discharge in both the Lothrop and the Killian; this is in all probability due to an infected cell that has been overlooked at the time of

* Read before the Eye, Ear, Nose and Throat Section of the West Virginia State Medical Association at Martinsburg on May 22, 1929.

the operation. Septal cells and small supraorbital cells seem to be the predominating cause of this condition. In the Killian a return of all symptoms may occur, due to the closure of the opening into the sinus by the sinking in of the soft parts, and excessive granulation, caused by the removal of the lachrymal bone, nasal process, and the adjacent frontal bone which removes the bony support around the osteum. Dr. Sewell uses an osteoplastic flap to prevent this sequellæ from occurring. In the modified Lothrop it is, of course, impossible.

FIG. 1.—First step. Skin incision for modified Lothrop operation.

5. Fistula formation at the inner angle is likely to be present in the Killian, especially if instigated by the wick of gauze so often used for drainage. The removal of the bony support of the ascending process weakens this point, and if the drainage of the sinus through the enlarged ostium is occluded, it is likely to break through one of the stitch holes in the soft tissue at this inner angle.

6. Hemicranial anesthesia and neuralgia, due to the cutting of the supraorbital nerve, are the same in both operations.

7. Diplopia is never a cause for worry in the Lothrop, whereas it may occur in the Killian from the dislocation of the pulley of the superior oblique. This can be prevented by approximating the cut edges of the muscle with a catgut ligature.

I remember the case of a girl we had for one of our very first Killians. This girl had a chronic frontal sinusitis. We did the Killian operation and she developed a terrible diplopia—so much so that she could not go downstairs without closing one eye. Ten years later she had a secondary infection in the same sinus and we opened it, and, after cleaning out the infection, we picked up the cut edge of the muscle, sewed it back in place, and the diplopia disappeared. Since that time we have been very careful to always approximate the cut edges of the muscle with a catgut suture.

We have had four cases with cut muscles that have come in from other men, which we have repaired, with the relief of the diplopia.

8. Blindness on the operated side has been reported by several authors, one case occurring in our clinic. This was probably due to injury of the optic nerve when curetting in the neighborhood of the sphenoid sinus, as in this case the ethmoids were extirpated and the sphenoid sinus opened. The optic nerve, like the facial, is very prone to insult, and it is quite possible that injury occurred through a thin sphenoidal wall or a dihescence in the region of the posterior ethmoidal cells.

9. Death following frontal sinus operations; the shock or a lowered resistance stimulating the growth of latent infection in neighboring sinuses, which penetrates into the brain. The chief danger is septic osteomyelitis or meningitis. These complications are more prone to follow the Killian.

10. The short period of convalescence in the Lothrop with a minimum disfigurement (the scar being almost all within the hair-line of the eyebrow) and the willingness of the patient to undergo the operation when it is known that the eye is not to be disturbed.

FIG. 2.—Periosteum, incision above supraorbital rim and point of entering the sinus.

Before we start with the slides, I might say that the majority of these operations, in our clinic, are made two-step operations. We do the intranasal work first, which consists of taking off the anterior end of the middle turbinate and rasping the frontal ostium. Many times this intranasal operation will relieve the patient of his frontal sinus condition. If that is the case, well and good; if not, and he has to go on to a radical operation, our first step of the

operation has been completed, and a week later we undertake the external surgery, which I am going to show you by slides. We will run through the Killian operation first.

Slide No. 1 shows the original skin incision extending not only through the length of the eyebrow but well down the side of the nose.

No. 2 shows the dissection of the skin and underlying soft parts upward and downward over the supraorbital rim, exposing the periosteum which has been incised, and an opening made through the frontal plate by the half-round chisel into the sinus

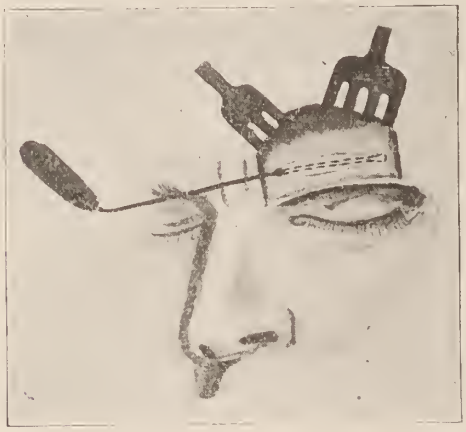


FIG. 3.—Sounding for limitations of the sinus.

for sounding (to obtain the dimension in all directions) of the sinus.

We no longer follow this procedure, as we found that, when the soft parts were dissected away from the periosteum and the periosteum elevated as a single layer, it was quite difficult to approximate the edges of this thin, friable tissue; so we now dissect our skin upward as one layer and carry our second incision downward through the periosteum and dissect the soft parts and periosteum as the second layer. This allows us to bring this second layer down and get a complete covering of the wound by periosteum.

No. 3 shows the further dissection upward of the soft parts, over the dimension of the sinus, and the supraorbital periosteal incision.

No. 4 shows the periosteum and soft parts being retracted, an incision one-fourth of an inch above and following the line of the supraorbital rim, is made with the Killian V-shaped chisel through the bone, starting about one-fourth of an inch from the outer limitations of the sinus and ending in the round opening made (by the removal of the button of bone) with the half-round chisel.

No. 5 shows the removal of the anterior sinus wall. This is accomplished by deepening the groove until the sinus is penetrated and the bone removed piecemeal by the flat chisel and Rongeurs forceps. At this point the sinus is cleansed of all diseased tissue.

6. This slide demonstrates the attack on the inferior wall, the soft parts having been dissected downward and outward, the periosteum is incised at the upper internal angular edge of the orbital ridge, the incision being carried down to the lower part of the attachment of the lachrymal bone with the ascending process of the superior maxillary. The edge of the periosteum is carefully elevated, then, together with the attachment of the superior oblique and trochlear nerve, is raised in mass and pushed over the orbital flat. The lachrymal duct is raised from its fossa along with the periosteum lying over the anterior third of the lamina papyracea, and as much of the internal and superior orbital socket is laid bare as is found necessary for working space.

7. The exposure of the lamina papyracea and orbital wall of the frontal sinus.

8. The removal of the orbital wall of the frontal sinus, which is done by breaking through from below upward with a chisel, and the biting away of the bone with the Rongeur forcep.

FIG. 4.—Sounding outer limitations marking for bone incision.

9. The outlining for the removal of the section of bone "maxillary process," covering the infundibular and anterior ethmoidal cells; the periosteum having been elevated outward, two horizontal furrows are made in the ascending process opposite and anterior to the lachrymal bone. This may be pried out with a large concave chisel and the superior portion of the lachrymal bone removed by bone

forceps. The flap of underlying mucosa is removed.

10. Shows the bulla and the entire anterior ethmoidal labyrinth which may be exenterated if found to be diseased. It is a simple matter to continue the extirpation of the ethmoidal cells and remove the anterior wall of the sphenoid if found to be necessary.

11. The wick of gauze carried upward through the nostril and brought through the supraorbital opening for drainage of the sinus.

You notice, in here, all of the bony structure is removed—every bit of it. That is where the trouble often occurs, and where Dr. Lothrop makes his bony flap. It sinks in, sometimes, and absolutely

FIG. 5.—Periosteum elevated upward. Groove being made in the bone, forming the superior edge of bridge. Note periosteum on the bridge is not disturbed.

occludes that new ostium or passageway which you have made for permanent drainage.

Number 12 is the completion of the operation. The wick of gauze noted at the inner angle is the one spoken of at the beginning of the paper that causes the fistular formation. If we have a tremendously large sinus, we put it at the outer angle of the eyebrow; we do not use that wick at the inner angle.

We come to the modified Lothrop operation. Lothrop, as you know, was a general surgeon of Boston. He died recently. He did not profess to be a nose and throat man, and that was his incision into the sinus there [indicating]. He operated by taking out the upper portion of the septum intranasally before he made the external incision; but he didn't go any higher than that. That was the length, the extent, of his incision. We have tried to modify this incision. These drawings I, myself, have made, and my brother and I have added the footnotes.

The Modified Lothrop Operation as Done in the Skillern Clinic.—No. 1. For the right side: The incision is started at a point about one half inch below the inner end of the eyebrow, over the suture line of the nasal bone and ascending process of the superior maxillary. The incision is carried upward and outward, in a graceful curved line, through the center of the eyebrow to its outer extremity.

For the left side: The incision is started at the outer end of the eyebrow and brought inward, care being used to remain in the center or just below center of the hair line. When the inner end of the eyebrow is reached, the incision is curved downward to extend down the side of the nose for about half an inch. This original incision is made very superficial, being more of a scratch on the skin to give the line of future scar.

The incision is now carried down through the skin, which is dissected free from the underlying tissue as high as the upper end of the sinus and well over the midline of the forehead. The incision is next carried down to, but not through, the periosteum and the muscle, and fascia dissected upward and inward for about half an inch. A troublesome hemorrhage from the angular branch of the lateralis nasi and from the frontal and supraorbital may require ligation with No. 0 plain catgut.

FIG. 6.—The anterior wall of sinus removed.

Don't use any more ligatures than are absolutely necessary, because they tend to make scar tissue and make the eyebrow bumpy.

Other bleeding is controlled with hemostats and gauze packing wrung out in adrenalin, care being used to protect the eye from the pressure of the hemostats. The skin and underlying tissue is next retracted with four prong retractors, so that a point half an inch above the supraorbital ridge is exposed.

While the retractors are held by the second assistant, the periosteum is incised. Starting a quarter of an inch above and remaining a like distance,

the incision is carried outward the length of the supraorbital ridge. The periosteum is elevated upward and inward for about a fourth of an inch; the lower portion or that over the supraorbital ridge is not disturbed, except along the very edge of the incision, which is elevated to prevent injury when the chisel is being used.

3. With a small, half-round chisel, an opening is made above the supraorbital ridge immediately above the frontal articulation of the superior maxillary.

3. By cutting directly downward, a button of bone the diameter of the chisel is outlined and pried out, leaving a small, round opening for exploration of the sinus.

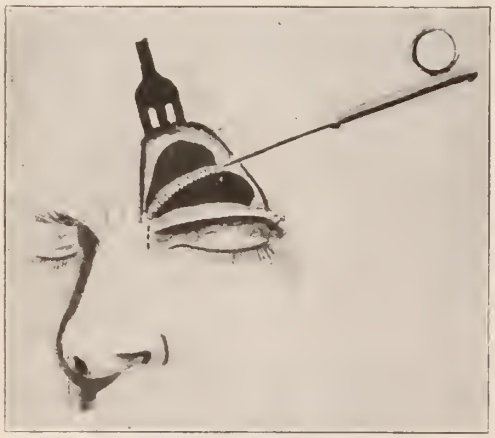


FIG. 7.—Enlargement of ostium by rasp.

4. The sinus is explored in all directions by means of a blunt, soft silver probe, and its limitations noted. The periosteum and overlying soft tissue is then elevated in mass, upward and inward slightly beyond the confines of the sinus. The next step would be the making of the bone incision, but, as a precautionary measure against starting the opening beyond the outer limitation of the sinus (into the cranial cavity), the probe is again passed outward and the outer confine of the sinus marked above the supraorbital ridge, where the groove is to be started.

5. The angular Killian V-chisel is used to make the groove; this is done by placing the point of the chisel at the mark showing the external limit of the sinus and one half inch above the supraorbital ridge. By gently tapping with a hammer, a shallow furrow is cut in the bone, ending at the round opening previously made in the sinus for exploration, care being used to follow and keep a like distance above the orbital rim. The furrow is gradually enlarged until a long slit is made into the sinus.

A straight, broad chisel may be next used, but only on the upper edge of the slit, to enlarge the opening so that Rongeurs or other suitable bone-biting instruments can be used.

The entire anterior wall of the sinus is thus removed from its outer and upper confine to the inter-sinus septum, care being taken not to injure the supraorbital ridge.

6. The diseased portion of the sinus mucosa is removed with curettes, and the underlying bone is minutely inspected for any signs of necrosis. All ramifications are opened and all partial septa removed, thus making the sinus one large, smooth cavity.

The x-ray plates are referred to and studied in conjunction with the opened sinus. Any abnormalities shown by the plates are explored and, if found, opened in their entirety, thus throwing them into the sinus cavity.

Possibly the cell found most frequently is a supraorbital ethmoidal cell. It may be of any size from a pea to a long, slitlike cell, extending outward the full length, or even beyond the floor of the frontal sinus. If this cell is situated in the outer half, it may

FIG. 8.—Enlargement of ostium by rasp forward and outward.

have a long, tortuous, constricted, canal-like osteum emptying into the superior portion of the middle nasal passage directly behind the frontal osteum.

I saw one of the most peculiar formations the other day. One of our students showed it to us. He had been working on a body in the dead-house, making sections, and found a supraorbital temporal cell. He took a broom-straw and ran it through, and it had a long canal that went underneath the frontal sinus and emptied into the superior nasal passage behind the opening of the frontal sinus. If that cell had been infected I don't know how it would ever have been diagnosed. The patient would

have had the symptoms of ethmoidal disease with a discharge and all of the other symptoms, but how in the name of heaven anybody would have diagnosed a cell out there as a sinus condition I don't know.

Possibly the next in frequency are the infundibular cells, frontal bulla, cells in the agger nasi and septal cells, the last being more in the class of ramifications of the frontal. If any of these be diseased, as they so often are in a frontal sinusitis, and are overlooked at the time of operation, our procedure for a radical cure will in all probability be a failure.

FIG. 9.—Removing the anterior superior nasal spine from above downward.

7. The next step is the enlargement of the frontal osteum. A reflected light, or headlight, is useful at this point for the locating and sounding of the ostium. It may be necessary to enlarge the opening into the frontal sinus by the removal of more of the anterior plate downward and inward to the nasofrontal suture. This should be avoided, if possible. As the supraorbital notch is in this field and may be rather deep, it is well to leave as much bone as possible near the orbital rim, so as to avoid fracturing the supraorbital ridge.

8. The sound is passed through the osteum and brought out the anterior nares. A rasp is guided down alongside of the sound and the sound removed.

9. The osteum is now enlarged forward toward the septum, and forward and outward. The point of the half-round bayonet chisel is placed against the anterior-superior nasal process, and with gentle blows this is broken through and removed. All rough edges are rasped, and a long piece of gauze carried through and brought out of the anterior nares. With a saw-like motion, this gauze is pulled through several times to collect all fragments of bone and loose mucous membrane in its meshes.

This newly formed ostium should be large enough to admit a piece of rubber tubing the size of a lead pencil. A procedure that, I think, originated in the Skillern Clinic is next carried out: The beveling of all edges of bone around the external opening. This is done to do away with a sharp edge and a sudden sinking in of the tissues, thus minimizing the disfigurement, and to give more periosteum. You will be surprised at the amount. You take hold of the periosteum and pull it down, and you say, "Well, that won't meet at all." Then you bevel the edges of bone, and the periosteum not only comes down and meets, but overlaps. It seems to give you a tremendous lot of periosteum by just this simple little step.

The entire sinus is wiped out with gauze, especial attention being given to all recesses, and, with a final inspection, the wound is ready for closure.

10. A piece of rubber drainage is carried down through the opening into the nose and brought out the nares. The upper end, being beveled, is placed about the center of the floor of the sinus and anchored by chromic gut suture, the ends of which are brought out through the skin and held by a hemostat.

Now, there is what would be an ideal opening into the frontal [indicating]. That would never

FIG. 10.—Bone work completed, showing enlarged ostium. Note floor of sinus removed.

close; but we never get as much as that because it is pretty thick in here, as a rule, and it is rather dangerous chiseling that close, so it is probably about half that. But even that gives you plenty of breakage.

11. The periosteum, fascia and muscle is brought down by interrupted catgut sutures, and the skin and superficial fascia with silkworm gut.

12. The stay suture of the drainage tube is then tied over a hemostat and the ends tied long to

differentiate it. The tube is then pulled down until the stay suture is tight; this should bring the upper end of the tube in the most favorable position for drainage. If there is a deep, gutterlike supraorbital cell which has been opened into the frontal sinus,

FIG. 11.—Piece of rubber drainage carried down through the opening into the nose and brought out the nares. The upper end, being beveled, is placed about the center of the floor of the sinus and anchored by No. 2 chromic gut suture, the ends of which are brought out through the skin and held by a hemostat.

the drainage tube is wedged down in the gutter, which will hold it in place, and the stay suture may not be necessary. The other end of the drainage tube is cut off even with the nares. Several layers of vaseline gauze are laid over the wound, which

FIG. 12.—Periosteum, incision above supraorbital rim and point of entering the sinus. Closed by interrupted No. 0 catgut sutures.

is then dressed with sterile pads and bandage. The dressings are changed the following day and the same after treatment carried out as for the Killian operation.

In those cases of suspicious double frontal sinusitis in which a definite diagnosis has been made for the one side, but in which the condition of the other sinus is doubtful, it is good policy to break through the thin intersinus septum with a small, round chisel and enlarge the opening downward and forward until sufficient bone is removed to allow thorough inspection of the mucosa by means of a reflected light. If it is found to be diseased, it is quite possible, in some cases, to curette this sinus without further external surgery. Here let me emphasize that, unless *all* diseased tissue is found and removed, one need not expect a complete and permanent cure.

If the sinus is found to be in a healthy condition, no harm has been done, as we have never yet had the infection extend from its diseased fellow.

In cases of double frontal sinusitis in which the adjacent sinus can not be curetted through the breach in the septal wall, it is a simple matter to procure complete exposure of the entire anterior plates by making an incision across the bridge of the

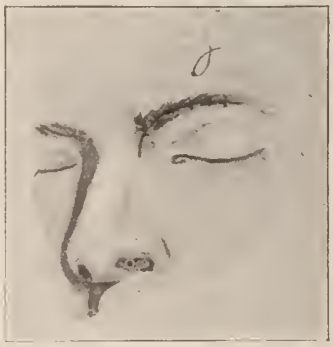


FIG. 13.—Stay suture brought through and tied, wound closed; catgut for periosteum, silkworm for skin.

nose, joining the two lateral nasal incisions and dissecting the entire flap upward. As the great majority of patients requiring a double frontal operation wear glasses, the cross incision is made where the nosepiece of the glasses rests. If this is done, with a careful original incision and closure of the wound, the scar will be so insignificant that it will require very close observation to discover it and will never be seen when the patient wears his glasses. If it is impossible to get sufficient space, in operating on a very large single sinus, no hesitancy need be felt in following this procedure.

This shows the completed operation. It heals with very little scar tissue; in fact, the only scar that you can see is right here [indicating] at the inner edge of the eyebrow.

This slide shows you the amount of bone resection in the Lothrop operation. You see, you can get to

every crevice of the sinus, all up in these little interstices; every place, even down over this supraorbital ethmoidal cell. You have not disturbed your normal opening—that is, you have not removed the bony support of the normal opening; whereas, in the Killian, this bony support is removed when the inner orbital wall is opened. If you break through the septum (the intersinus septum), take away that portion of it down to the floor, and if the other sinus be diseased, it is well enough to clean it out and rasp your opening; if it is not diseased, don't touch it, but leave the intersinus septum open, because then you have a normal functioning ostium on the healthy side with an enlarged ostium on the diseased side, and even though that diseased ostium may close, the other one will remain patulent and give permanent drainage.

This slide shows the amount of bone resection in the Killian operation. Not only the frontal plate has been removed, but all of the lateral and the orbital plate, as well.

Discussion

DR. H. V. KING (Morgantown): I am not qualified to discuss the Killian operation because I have not done it. So far, I have not had a case in which I felt it necessary. I have a case now which will probably come to operation next month, in which I shall use the Lothrop modification.

In regard to osteomyelitis, two cases were reported the last time I was at the Massachusetts Eye and Ear. The reports were made at a meeting of the New England Otolaryngological Society, and I think Dr. Cahill did one of them. One of the cases was fatal and the other recovered with great deformity.

Both were diagnosed as not being a result of the operation, and the history of one seemed to point to osteomyelitis before the operation.

I heard some talk there of Lynch's method, and perhaps Dr. Skillern will give us a word on what it is.

DR. T. W. MOORE (Huntington): I remember when we began doing the Killian in this country, one of our very distinguished and very skillful operators, who was entertaining a prominent rhinologist from Vienna, invited me to his clinic to see him do a Killian. The patient was a minister of the Episcopal church, whom I knew very well. I remember that he walked into the operating room, laughing, saying that he had been having a bad breath and decided to have a sinus operation, thinking it would remove the odor. A double Killian was performed, the operation taking three and a half hours. The day after the operation, the patient developed an ether pneumonia and died. I was so shocked that I have never had the courage to try the Killian operation; but after Lothrop described his operation before the American Medical Association in 1915, in company with some other rhinologists, I performed it on cadavers. At that time I had a series of chronic frontal sinuses; seven, I think. I operated on all of them and they were all cured. The results were so gratifying that I became quite enthusiastic. I have had a good many since, that I haven't been able to cure. This was the original Lothrop operation, in which we opened both sinuses regardless of whether both were diseased or not. I have never had cause to regret doing so, although it does seem usncientific to open a healthy sinus.

Dr. Skillern takes off a great deal of the frontal wall—as much as is necessary. Lynch and Mosher have dwelt much upon the bugbear of osteomyelitis. I have never had this complication from a frontal sinus operation, and in the original Lothrop we went in at a place where I think one would be most likely to have it. I would like to ask Dr. Skillern what has been his experience with osteomyelitis. Lynch claims to have devised his operation to get away from this one thing, because he did have one or two or three cases of osteomyelitis.

I remember, a number of years ago (twenty-five years ago, probably), when we didn't pay as much attention to the x-ray as we do today. I had a very good-looking woman, a large woman with prominent eyebrows, upon whom I performed a frontal sinus operation. When I made my incision and reached the bone I found she had a sequestrum of the entire frontal wall of one sinus. There wasn't anything to do but to remove it, after which there was a step which seemed about one half an inch. The side from which I had removed the sequestrum being depressed that much, I didn't know what to do. Her family physician was helping me, and finally I decided I would take off the other side, which I did, making the frontal wall even. Very fortunately for me, the woman was delighted with her appearance afterwards. So I got by with this very nicely.

I have never used a trephine; having always used a gouge. It seems to me that I handle a gouge with more precision than I can a trephine. I have tried the trephine several times in mastoid work, but never satisfactorily, so I think the question of

whether you use a trephine or a gouge is simply the personal equation.

I like Dr. Skillern's method of removing the fragments of bone. I think it is a very excellent idea.

I want to say something else, too, about rasping out the fronto-nasal duct. Where you go down the way Dr. Skillern recommends, be very careful to use a small rasp at first. Dr. Skillern, in his cut, shows a very large rasp. I remember, some time ago, in doing this, in putting the rasp through I thought I was not using any force, but I crushed the posterior wall right into the cranial cavity. Outside of the patient having a persistent headache for about two weeks (which worried me terribly), he recovered without any disastrous effects; but an accident of this kind might be followed by meningitis.

DR. SKILLERN (*closing the discussion*): I was just wondering whether I had a picture of Lynch's operation with me. I don't believe I have. Lynch's operation, as I understand it from Dr. Lynch, is similar to the Knapp operation. Most of his work is done under the supraorbital ridge; not above it.

Dr. Moore, we don't have osteomyelitis following this Lothrop operation. I want to qualify that a little bit. Provided the anterior plate is not involved —if osteomyelitis has not already occurred in the anterior or posterior plates—we have yet to have a case develop. If the sinusitis is confined to the mucosa of the sinus, and we take off that entire anterior plate, we have never had an extension.

If you will allow me a minute or two, there are three cases that I recall very vividly. Two of the patients died; one of them got well. The first was a woman who came in to me last year, in September. You can imagine the condition she was in when I tell you that she was six feet tall and weighed 69 pounds. She had a discharging sinus half an inch above the inner angle of the orbit. The pus was running down over her eye when she came into my office. I reported that case and read it before the Eastern Section of the Trilogical Society meeting in Washington last year. When I opened that woman's skull it looked as though worms had eaten the entire anterior plate away, and it had extended not only through the confines of the sinus but on back, so that when I opened her sinus I exposed the brain. I enlarged this opening in the posterior plate for drainage of the brain abscess.

When I put my rasp in the ethmoidal cells, it just went *thump*, right into rotten tissue. Both of the maxillaries were putrid. The bone was just as necrotic as it was possible to be. Fortunately, the woman never recovered consciousness after the operation. I say she never recovered consciousness; she came to long enough to say, "You almost killed me, didn't you?"—and died [snapping fingers] like that.

The other case was one that came on from San Francisco to Ross. It was without doubt the most massive case of osteomyelitis I have ever seen. Ross did a very complete operation. He saw at the time that it was useless. I was assisting him. He is going to report it to the Rhinological Society in San Francisco this year. I suppose I am trespassing on his grounds, but I am going to tell you just a little bit about it. He operated on this patient, who apparently started to get well and then suddenly died. We made a *post-mortem* examination and found a great, big brain abscess fully the size of an English walnut, both intradural and extradural. I was assisting with the examination. We opened the sphenoids. They were both filled with necrotic, degenerated material, and it was the first time that I have ever seen the greater wing of the sphenoid involved by osteomyelitis. Even the greater wing of the sphenoid was all diseased and rotten.

Now, the third case is one that I am going to report in Portland, Oregon, and I am proud of it. I was called up to an adjacent city to see a lad, and found him—well, I don't believe the boy would have lived three days longer. I don't see how he could have lived. His heart was all shot to pieces, his kidneys showed acute nephritis, and he was terrifically toxic, scant in speech—in fact, when asked "How do you feel?" he replied, "I-I-I-'m all-all-right. No-no-no, I'm feeling rotten." That is the condition the boy was in when I saw him. His temperature was 103°. I told the parents: "I think he has a 60 per cent chance of dying on the operating table. I don't see how he can ever live through the operation, but the only thing to do is to operate." We operated. Let me go back just a minute. That boy went in swimming, and ten days later he developed acute headaches. Four days later he had a perforation here (frontal). Two days later he had a perforation here (temple). Two days later he had a septal abscess, and a day later another septal abscess, and the surgeon had undermined the skin and put a drainage through with a rubber tube in it. That is what I found when I took the bandage off his head.

I opened that boy's sinus. The anterior plate was all necrotic, osteomyelitis having set in. I removed the entire anterior plate—in fact, I chiseled back so

far that I was afraid I would go into the cranial cavity. I mean, I beveled my edge back so far, and I had to use such force in going into the posterior plate with the curette that my assistant said he was scared to death—that wasn't the word he used, but he said he was scared every time I went in and bore down on that curette, that I was going to go not only through the plate but right on through his brain.

Rather to my surprise, that boy made a beautiful, uneventful recovery. He was discharged from the hospital, and two weeks later his surgeon called me up and said: "Doctor Skillern, Noyes Corbin has an extension of the osteomyelitis at the frontal parietal suture line." I said: "All right, doctor, I'll come and see him." I went up to see him. This chap was a pretty clever surgeon. I said: "Doctor, you can do that as well as I can." He said, "What will I do?" I said, "You go in there and chisel out every particle of bone that you find to be diseased, and then keep on going for about a quarter of an inch into healthy bone." He said: "What am I going to do then?" I said: "Keep it saturated with 1–5000 bichloride solution day and night." He started here [indicating], and he brought the incision all the way down to the outer edge of the hair line, laid it wide open, and kept it saturated with bichloride. In three days' time the boy felt so much better that he was up out of bed. He was in my office about two weeks ago, and he was so well that I took him down and had his picture taken, to show it before the American Medical Association, and I had slides made of it.

So it all depends on the old surgical adage—the resistance of the patient and the virulence of the organism. In the two cases that I refer to, the patients were very poor surgical risks and the organism was very virulent. In this other case, apparently, the organism had lost a good deal of its virulence and the patient had built himself up in those two weeks' time so that he could resist it. But I have gone all through the literature, have spent several afternoons and evenings trying to find cases, and I could find only five in which there has ever been recovery following osteomyelitic extension, following radical sinus operation. In other words, there are only five cases on record of radical frontal sinus operation with an extension of the osteomyelitic process and recovery.

Dr. Hartman, we leave that tube in as long as there is any drainage. We leave the tube *in situ* about ten days. Our object is this: As you all know, scar tissue starts forming right away, and by leaving the tube *in situ*, scar tissue will form around the tube and form a false osteum. We believe that in many cases that ostium entirely closes, but as the sinus is entirely free of infection it makes no difference. Personally, I, for one, do not believe in vacuum frontal sinusitis. I think that in so-called vacuum frontal sinusitis you have a serous discharge of a bacterial invasion with a serous discharge and closure of the ostium, and either pressure of the mucous membrane or pressure by the serous secretion, and when you shrink the mucous membrane down you let out the serum, which is practically invisible—it runs down and you don't see it, and you say: "There! We have opened the sinus and let the air in and we have relieved the headache." I don't believe that. I believe that you have relieved the pressure on the mucosa.

On the percentage of recoveries, I can only recall four deaths in our clinic. You know, the Skillern clinic has the reputation—at least, we try to have the reputation—of telling the truth. We try to report our failures as well as our recoveries, because it is by our failures that we learn and do our best work, and I can honestly say that I can only recall four deaths, and I know of two deaths last year in about 25 or 26 frontal sinus operations, and those two patients were practically dying when they came on the table. They were such poor surgical risks that one case had been turned down by another otolaryngologist in Philadelphia.

Local or general anesthesia? We always use general anesthesia, because of the shock of the operation. In the first place, you would have an awfully hard time to get complete anesthesia with local; and, in the second place, the shock of the operation would be so great that I wouldn't care to do it.

SOME OF THE CAUSES OF BACKACHE*

By W. E. DODD, M.D.
Martinsburg, W. Va.

Perhaps there is no symptom more annoying to both doctor and patient than that of which we speak as backache. Backache is really not a single entity, but rather a group into which is placed many types of aches and pains ranging from slight discomfort to the severe, stabbing pain of renal colic. There are many kinds of backache. There is the severe and the mild; the sharp and the dull. There is the con-

* Read before the Eastern Panhandle Medical Society at Martinsburg, West Virginia, on September 18, 1929.

stant and the intermittent type. There is the form which is absent in the morning and which develops and grows worse as the day progresses. On the other hand, we have a form which is most severe in the morning, but which wears off as the day goes on.

The location of backache varies. Dr. Emil Novak states that the pain of backache is less precisely located than any other type of pain. Yet we recognize certain points of localization and certain types of generalization which help us enormously in diagnosing the underlying cause. The location may vary from the tip of the coccyx to the base of the skull, but what is commonly known to the laity as backache refers to an ache in the lumbar or sacral regions. Within the confines of these regions we again have certain points of localization. For instance, the pain may be more severe on one side than on the other. It may be high or it may be low. It may be general or it may be confined to a spot so small that it can be covered with a silver dollar.

As the treatment of this troublesome symptom depends entirely upon an understanding of the underlying causes, I shall spend what time is allotted to me in the consideration of cause rather than cure.

Before attempting to go into the various causes of backache, let us review our anatomy for a moment. If we look at the articulated skeleton as a whole, we are at once struck by the unstable appearance of the lumbar region. Above we have the bony thorax and the shoulder girdle forming a strongly constructed framework in which each bone either braces or strengthens the others. Below the pelvic girdle essentially does the same. But, intervening between these two strongly constructed regions we have nothing but five disks of spongy bone piled one on top of the other, and, to make things even worse, they do not sit squarely upon a base whose plane is at right angles to the axis of the body, but rather sit upon the sacrum whose upper plane tilts forward and downward. True, these disks of spongy bone have certain processes or outgrowths, but their bracing action is small, compared with that which we see above and below this region. Indeed, the transverse processes are the cause of a certain type of painful back, while the downward and forward slope of the sacro-lumbar articulation is fundamentally to blame for another. I shall say more of these two conditions later.

This weakness of the bony skeleton in the lumbar region (which, by the way, is essential to provide flexibility for the trunk) is partially compensated for by certain strong groups of muscles which bridge this region. The ileo-psoas and muscles of the anterior abdominal wall lie in front, while the latissimus dorsi, serratus posticus, quadratus lumborium, erector spinæ, and posterior portions of the two obliques and transversalies constitute the chief groups behind. Deep within these muscle masses is the usual site where the patient tells us that his pain is located. I do not mean to say that the pathology is always here. Indeed, in the vast majority of cases it is somewhere else; but here is where the backache is felt. Here is the site to which the pain is referred. I am sorry that I can not tell you the full "why and wherefore" for this, but it is true that the sensory nerve supply to these muscles comes from the same sensory roots of the spinal cord which communicate with the sympathetic system, innervating the abdominal and pelvic viscera as well as true sensory filaments from the kidney, ureter, and bony spine. Before leaving our anatomy, let me mention, in passing, that the kidneys and adrenals lie directly in front of the lumbar region.

The pancreas lies at its upper border with the spleen and stomach in close proximity. Below we have the pelvic organs of generation in the female and the prostate in the male; while directly in front lie the mesenteries with their attached intestines. We can readily see that pathology in any one of these viscera, some of which are devoid of pain sense themselves, might have a sense of pain referred through nerve communication to the back.

Were I to attempt to cover all of the causes of backache, I would have to write volumes rather than the brief paper which I have to present this afternoon. Therefore, if I fail to mention a type of backache which you may have in mind, or if I fail to enlarge upon it in a manner satisfactory to you, I beg your leniency.

The first of the causes of backache which I shall mention is posture. A well-proportioned individual who maintains an erect posture has the center of gravity of his body falling upon the central axis of his lumbar spine. But let that individual become stoop-shouldered or develop a slouching posture, and we have the center of gravity of his body shifted from the axis of his lumbar spine to a point in front. Consequently, the dorsal muscle masses have to do extra work to keep him from doubling up altogether. Extra work means increased likelihood of muscle fatigue, and muscle fatigue in this region means babckache. This backache, due to muscle fatigue, has doubtless been experienced by all of us. We can remember that, after having bent forward

for some considerable time, and upon attempting to straighten up, our first efforts were accompanied by severe pain in the back. After gaining the equilibrium of the upright posture and our muscles having been allowed to rest for a short time, the pain passed away. Backaches associated with various types of spinal curvature are due, to some extent at least, to the shifting of the center of gravity to an unstable position, which throws extra strain upon certain groups of muscles. Before I go further, let me mention a reform which our younger generation has enacted for themselves. I refer to the corset, which our young ladies have relegated to the attic along with the hoopskirt and other instruments of torture. In olden days it was the custom of our ladies to wear a tight-fitting corset from the time they came into womanhood until death released them. In fact, their dead bodies carried their whalebones along into the grave. There is no excuse for a normal, healthy young lady to splint her back with steel and bone, thereby destroying or lessening the normal flexibility of the trunk, causing its important muscles to atrophy rather than develop, simply because tradition says so. Well-developed back muscles form one of the best safeguards against backache which may develop in later life. I do not mean to say that certain forms of support to the abdomen and back are not needed in some cases. Indeed, there are certain types of backache which can only be relieved by a properly fitting support or corset. But here, again, proper exercise must be combined with support if the best results are to be expected.

A few moments ago I mentioned that a certain type of painful back could be laid to the door of the transverse processes. I had reference at that time to the abnormally long transverse processes of the fifth lumbar vertebra, which, because of their length and low position, impinge upon the iliac crests. An individual with this anatomical defect, upon sudden exertion or particularly upon twisting his back, feels a "snap" and suffers a severe, sharp pain in the region of the fifth lumbar vertebra. The pain usually persists for hours or days, and a carefully made x-ray examination will either make or confirm the diagnosis. It may be pointed out that faulty position of the patient upon the x-ray table will often give a picture of an impinging transverse process, when in reality the condition does not exist. Some cases of so-called sacro-iliac dislocation, subluxation, or sprain (call it what you will), are due to this condition, and can only be cured by proper surgical procedure.

Since I have mentioned sacro-iliac sprain, let me say right here that I believe that this is an exceedingly rare if not an entirely extinct condition. The sacro-iliac synchondrosis is the strongest joint in the body, and I believe it is impossible to rupture its continuity by indirect violence. True, this joint sometimes gives way under severe direct violence, in which case we often have associated fractures of other parts of the pelvis, but to sprain it by lifting, twisting or other manipulation is beyond the ability of even a chiropractor. Therefore, before making a diagnosis of sacro-iliac subluxation, every other cause of backache should be carefully ruled out and confirmatory evidence be shown by carefully made, stereoscopic x-ray pictures. I can not agree with those men who say that, whenever a patient consults us with backache, we should first think of sacro-iliac relaxation. On the contrary, I believe that sacro-iliac relaxation should be the last to receive our serious consideration.

I also called your attention, some time ago, to the fact that the plane between the fifth lumbar and first sacral vertebræ sloped downward and forward. When severe strain or the force of direct violence is directed downward along the lumbar spine, it is much more likely that this joint will slip rather than the stronger sacro-iliac joints below. The articulating surface here is only about one sixth the combined sacro-iliac articulations and the supporting ligamentous attachments are not so strong. The slipping of one vertebra upon another is spoken of as spondylolitheses and is not infrequently the cause of the recurring sprained backs seen in manual laborers. In its early stages it is exceedingly hard to diagnose, even with the aid of the x-ray; but, once definitely diagnosed, it can be relieved by a change of occupation or cured by one of the types of spinal fusion operations. The lumbar muscles themselves are capable of being sprained. If sufficient force is applied either by direct or indirect violence, minute tears may be produced either in the substance of the muscles, in their fascial coverings, or, more rarely, in their tendenous attachments. In case of sprained muscles, local tenderness elicited on deep palpation is our most valuable aid to a correct diagnosis. This condition readily clears up if some form of back support is applied or the patient is allowed to rest.

Tuberculosis of the bony spine in its early stages is often diagnosed as a sprained back, particularly if it occurs in a manual laborer. As the disease progresses, however, the physician sooner or later dis-

covers his mistake when an x-ray picture is taken or some tuberculous focus comes into evidence elsewhere in the body. Tuberculosis of the spine occurs more frequently in children or young individuals, but is far from rare in adults.

Secondarily, carcinoma of the vertebra, as well as tumors and degenerative processes of the spinal cord, are often productive of severe forms of backache, and are frequently misdiagnosed in their early stages.

I doubt if there is a more misused word in medicine or surgery than the term *lumbago*. Many authors use it as a synonym for backache, regardless of the type or cause. On the other hand, some take the opposite extreme and describe lumbago as a myositis or inflammation of the lumbar muscles and then apologize for the term "myositis" by stating that the only symptom of inflammation that is present is pain. It seems to me that we have insufficient evidence from both the clinical and pathological standpoint to call lumbago a true inflammatory process. True inflammations do occur in the lumbar muscles, but, strange to say, scarcely any one calls these conditions by the term *lumbago*. I refer to trichinosis, myositis ossificans, acute polymyositis, localized abscesses, and cellulitis. With the exception of the two latter, these conditions are disease processes of the entire muscular system and are not confined to the back. For my part, I shall reserve the term *lumbago* for those cases of true backache (and by true backache I exclude compensation neurosis and all other forms of backache arising above the level of the first cervical vertebra). I reserve the term *lumbago* for those cases of true backache which occur as the result of irritation of the intermuscular sensory nerve endings. The backache resulting from faulty posture, curvature of the spine, osteo-arthritis of the vertebra, sprained muscles, renal colic, etc., is not lumbago, but is merely a symptom referred to the back and caused by definite pathology elsewhere. One may ask what causes irritation of these intermuscular sensory nerve endings. There are two ways in which this may be brought about. The first is by some irritant carried to them by the blood stream. The second is the result of counter-irritation. Under the first heading we have bacterial toxins resulting from foci of infection about the teeth, tonsils, gallbladder, appendix, middle ear, accessory sinuses, or elsewhere; or those products of faulty digestion and excessive putrefaction arising from the intestinal tract. In the second instance, exposure to sudden chilling forms the chief example. A man works himself into a heavy perspiration, then sits down in a draft and is chilled. When he tries to get up a pain catches him in the back. He is inclined to remember some special exertion or trivial injury and to blame his backache upon that; while, in reality, injury had nothing to do with it. I believe the backache of influenza and other acute febrile infections are fundamentally true cases of "lumbago" as far as the actual pathology is concerned. Here again we have an irritation of the intramuscular sensory nerve endings by a bacterial toxin carried there by the blood stream. The backache seen following the injection of salvarsan or in cases of lead poisoning are of similar nature, provided there is no complicating renal irritation present.

Time does not permit me to do more than mention some of the causes of backache brought about by referred pain from definite pathology in the abdomen and pelvis.

Pathology involving the posterior wall of the stomach, enlargements of the spleen, a pathological gallbladder, or disease of the pancreas sometimes produce definite backache.

We are all familiar with the lean, lanky individual whose stomach, intestines and kidneys have a tendency to drop toward his pelvis, and we have heard him complain of backache along with his other varied symptoms.

Tumors of the kidney and adrenal produce severe backache, and often this is the first symptom noticed by the patient. Likewise, stones in the renal pelvis or pyelitis produce backache.

Malpositions of the uterus, particularly retroversion and the early stages of prolapse, produce definite backache.

The engorgement of the pelvic blood-vessels at the time of menstruation, particularly if there be some obstruction to the menstrual flow, is often accompanied by backache.

Fibroid tumors of the uterus, when extending into, or exerting traction upon, the broad ligament, often cause backache. Tumors and cysts of the ovary do not, as a rule, cause backache unless they become of enormous size, incarcerated in the pelvis, or inflamed.

Hemorrhoids and other diseases of the rectum or sigmoid may produce backache.

What of backache of psychic origin? It is hard, sometimes, to separate the "wheat" from the "chaff," but with the aid of the x-ray, the clinical laboratory, and our own sixth sense of unbiased

reasoning, our "wheat" is getting cleaner. The "chaff" of compensation fakery and laziness is becoming recognizable. If a man has a real backache, there must be some cause for it. If we look hard enough we will find that cause.

Backaches are the "bugbear" of all compensation carriers. The vast majority occur coincident with slight exertion rather than with accident or severe strain. Because of the numerous causes, I fear that backache, like the poor, will be with us always.

THE ROLE OF THE PUBLIC SCHOOL IN THE CONTROL OF TUBERCULOSIS *

By WALTER L. RATHBUN, M.D.
Cassadaga, N. Y.

During recent years, examination of school children on a large scale has assumed a major rôle in the tuberculosis movement. For the past six years the Newton Memorial Hospital group has been working in the schools of Chautauqua county, and our experience has convinced us that the public school is one of the most important fields in the control of tuberculosis. This opinion is based on the number of students found with pulmonary tuberculosis of the adult type; the frequent association of the childhood type of pulmonary tuberculosis, a benign form of the disease, and pulmonary tuberculosis of the adult type (the form that kills) before the age of twenty years, and the markedly greater incidence of pulmonary tuberculosis in the parents of children with the childhood type of pulmonary tuberculosis over that occurring in the general population. From 0.5 to 0.7 per cent of high school students have pulmonary tuberculosis of the adult type, and one half of these cases have signs of latent childhood type of pulmonary tuberculosis. The childhood type is found in only between three and four per cent of the total school population of our country, which means that 50 per cent of the cases of pulmonary tuberculosis developing during the teens is confined to this small group.

The routine followed in school work is as follows:

First: All the pupils whose parents have signed printed permission blanks are given a tuberculin test. The intradermic method is used exclusively. The dose given all, except small children, is 0.1 mgm.

Second: The positive tuberculin reactors and all pupils who have not been tuberculin-tested are x-rayed. Those who failed to react to tuberculin (negative reactors) are eliminated from the list of those to be examined.

Third: All with positive or suspicious x-ray findings or symptoms of tuberculosis are given a physical examination. These pupils are either treated or, when left in school, are studied from year to year. This routine enables a small force of workers to cover a great deal of ground.

The childhood type of pulmonary tuberculosis has a rather extensive and somewhat confusing nomenclature. Its chief synonyms are: juvenile tuberculosis, hilum tuberculosis, tracheo-bronchial gland tuberculosis, infantile tuberculosis, and the primary complex. It is the initial or sensitizing attack of the disease and is characterized by involvement of the tracheo-bronchial glands, following a primary lesion in the lung parenchyma. It is found most frequently in children under 12, and the site of attack is not limited to any special part of the lung parenchyma. It is a benign process, usually causing less interference with temporary wellbeing of children than an attack of acute infectious disease. As a rule, the active process either clears entirely or heals by calcification, fibrosis, or by both. In the adult type of pulmonary tuberculosis (phthisis or consumption), in contradistinction to the childhood type, the initial involvement usually occurs around or after puberty; its site is almost invariably at the summit of the lung; the bronchial glands are not involved; even a slight lesion has a tendency to spread to other portions of the same lung or to the opposite side of the chest, and areas of such disease frequently break down and form cavities. In addition, there is better correlation between physical signs and x-ray findings and symptoms are more frequently present in the adult than in the childhood type of the disease.

Owing to the lack of symptoms and the apparent good general health of a large majority of children with the childhood type of tuberculosis, its significance in connection with future health prospects is not generally appreciated. While the temporary effect on the health of the child may be almost *nil*, our findings indicate that lesions of the childhood type are danger signs pointing to possible trouble during the teens.

The childhood type may be divided into active and latent stages.

History.—1. Exposure: History of contact with a spreader of tubercle bacilli (an open case of pulmonary tuberculosis) is very important. A negative history of contact is of no diagnostic significance

* Original paper, contributed at the request of the Board of Publication.

unless the intimate associates of a child, particularly those of the household, have been examined.

2. Symptoms: During the active stage, cough (usually without expectoration), temperature (rarely up to 101 degrees), malaise (or tired feeling), pleuritic pain, poor endurance and nervous irritability may be present. The onset of puberty may be delayed. Weight may or may not be affected. However, symptoms that are noticeable to the parents are the exception rather than the rule, and, when present, are frequently of short duration. During the latent stage, symptoms are rarely present and the child is usually apparently well.

Physical Examination.—Childhood type: 1. Active stage: Subcrepitant râles may or may not be found, and, when heard, may be present for only a short interval (sometimes for less than a month). During the height of bronchial gland enlargement breath sounds may be poor or even absent over the adjacent lung area for an interval of a month or more, but following shrinkage of the gland the respiratory murmur returns to normal. During these intervals tactile fremitus is lessened or disappears. Slight dullness is occasionally present over the site of the lesion. It is seldom possible to correlate the physical findings with the x-ray picture, as even dense-appearing lesions seen on the x-ray film may not show any marked deviations from the normal in the physical signs.

2. Latent stage: Physical signs are present in but a small percentage of cases. Subcrepitant râles, fine or moderately course, occurring in showers following cough, are occasionally found. These râles may last for years, and occur most often in cases where fibrotic changes predominate. In my experience, râles are rarely found when healing has been largely by calcification. Percussion as well as auscultation of breath sounds and voice are seldom helpful. D'Espine's sign is of no value.

X-Ray Examination, Childhood Type.—Our main reliance in discovering cases of active or latent pulmonary tuberculosis of the childhood type is the x-ray film.

1. Active state: The active stage is characterized by a cloudy or homogeneous shadow in the lung parenchyma, involving a small area or as much as a whole lobe. The process may be located in any part of the lung. Coincidentally (or later) there may be an increase in density in the bronchial gland region. At times, swelling of the bronchial glands is the first x-ray indication of the presence of the disease. In some instances the swollen bronchial glands bulge or project from the hilum region into the lung parenchyma, where their rounded exteriors are visible. Usually, owing to the heavy shadows normally present in the hilum regions, or due to the close proximity of the spine and sternum, bronchial gland shadows can not be made out on the x-ray films until calcification sets in. The time when the picture is taken has much to do with whether or not uncalcified glands are seen. In some cases shrinkage is rapid, and nodes that were undoubtedly once visible have retracted to such an extent that their shadows are blotted out by the normal hilum densities. In some of these cases the hilum shadow, particularly when the right side is involved, is broadened sufficiently to arouse suspicion and to warrant further observation.

2. Latent stage: In the latent stage calcified primary foci or fibrotic changes, or both, may be seen in the parenchyma in any part of the lung fields, and calcified bronchial nodes may or may not be visible in some part of the hilum regions. Fibrosis is most frequently found in the upper or middle lung fields. Any one of the three may occur independently or all may be present. Bronchial gland calcification is usually found at the hilum adjacent to an involved area in the parenchyma. Calcified lesions are characterized by sharply defined, heavy, whitish shadows and are usually granular in appearance. In the inner half of the lung field, and particularly the inner third, calcified primary foci or calcified bronchial glands must be differentiated from the shadows of large vessels which may be caught "end on" when the picture is taken. The vessel shadows are usually rounded (not granular) and may disappear in one of the films of a stereoscopic set or the contour may be altered. Fibrosis is indicated by heavy bands or strands (linear markings) usually extending outward in various directions from the hilum region. Such shadows are frequently seen in the region of an interlobar fissure. In some instances, particularly where the involvement has been marked, the diaphragm is "high" on the affected side. Owing to the number of children found with signs of pleurisy, we have reason to believe that in many instances pleurisy is the initial lesion. Pleural densities (homogeneous shadows or dense linear markings) are most frequently found in the region of the interlobar fissures and laterally, particularly in the region of the costo-phrenic angle.

Examination of the school children of a community will disclose those with signs of childhood tuberculosis. To get the best results in numbers

examined, the work must be done in the schools, as a part of the school program. Judging from our experience, it is possible to acquire this information in any community, provided the local tuberculosis workers have the will to do the work. The school authorities are most coöperative in movements directed toward safeguarding the health of their charges, and every well-organized anti-tuberculosis program planned for their schools is sure to meet with favor. It is the ideal time to conduct such a campaign, as during school days children are available for examination as well as instruction along health lines. When school is over and the former pupils are established in industry, they are far less likely to coöperate than while under the salutary moral influence of the school authorities. After graduation one is wholly dependent upon the inclination of the individual to submit to routine examination, while before it was an actual part of the school life.

Owing to the close contact between students with pulmonary tuberculosis of the adult type and their intimate associates, there is a chance of spread of the disease unless it is recognized promptly and precautionary measures instituted. We found two cases in which the only known contacts were tuberculous fellow-students with positive sputum. Each of these had several brothers and sisters, all of whom were found negative on x-ray examination of the chest. Sputum-positive tuberculous teachers are found occasionally in the schools, and may be a source of spread of infection. However, to date we have not been able to demonstrate any such connection between teacher and pupil.

The mind of the child and adolescent youth is more receptive than that of any other group, and as future habits are then in the formative stage, it is the ideal time to inculcate knowledge that will make them health-minded during later years. In addition, it is the best time to familiarize them with the procedure of chest examinations as well as the danger signs that may call for further examination in the years to come. Also, it is the best cure for clinic shyness in later life that we have at our disposal

Many times a diagnosis of childhood tuberculosis leads to the discovery of a spreader of tubercle bacilli or carrier in the home. Often it is as effectual for this purpose as a guinea-pig inoculation—if the diagnosis is followed by an examination of the members of the household. We have found healthy-looking parents with fibroid pulmonary tuberculosis, some of whom undoubtedly have been intermittent spreaders of infection for many years. The only indication of the possible presence of tuberculosis in these households was one or more children with the childhood type of disease. Such parents are dangerous members of their communities until discovered and instructed in the ways of prevention either while at home or in an institution. Their children are subjected to repeated showers of tubercle bacilli from birth to the time they leave home, and their chances for exposure during periods of lowered resistance are far greater than in families where there are members with the fulminating type of tuberculous disease. Undoubtedly, much exogenous infection (so strongly emphasized by Dr. Opie in connection with the adult type of tuberculosis) of undetermined origin is furnished by this group.

Fibroid consumptives of this type can play host to the tubercle bacillus indefinitely without noticeable subjective or objective symptoms of tuberculosis. They are elusive factors to deal with in efforts directed toward prevention, as they are not sick and seldom, if ever, appear at a clinic of their own volition. The tuberculous child found at a school clinic gives us our first clue and a follow-back of the family group discloses the diseased carrier. Since March, 1929, we have studied 24 families in which one or more children were found with childhood tuberculosis at our school clinics. Our office force, who were without any knowledge of the family history, extended invitations to the parents of these children, requesting them to submit to a physical and x-ray examination of the chest. The names of the tuberculous children were taken consecutively from our school lists and no other efforts were made in the way of selection.

In 13, or 54 per cent, of the families studied, a parent had either died of the disease or has pulmonary tuberculosis at the present time. Four parents, or 17 per cent, have suspicious signs of tuberculosis; of these four, two are suspected of having minimal disease, while two have definite indications of healed pleurisy (one of the latter has a calcified focus in the lung parenchyma). In 17, or 71 per cent, of the families examined there were either deaths from tuberculosis or positive or suspicious cases still living in the households. Seven, or 29 per cent, of the family groups examined were negative. Thus far, our work has been confined principally to parents, and but few other adult members of the family units have been examined. It is our intention eventually to include in our study all persons with whom the tuberculous children have had intimate associations,

and to use as a check an equal number of families in which the children are negative to the tuberculin test. There were ten known deaths from pulmonary tuberculosis limited to nine of the twenty-four families. Of the 38 living parents and other members of the household examined, 7, or 18 per cent, have pulmonary tuberculosis, and 5, or 13 per cent, have suspicious signs of the disease—a total of 31 per cent. Thirty-eight children of these families were examined, and 87 per cent have signs of tuberculous disease.

It is estimated that one per cent of the adult population has pulmonary tuberculosis, or two cases per one hundred families. On the basis of our findings in one hundred families of children with childhood tuberculosis, there should be 29 living cases of pulmonary tuberculosis and 16 suspects; also 40 parents who have died with the disease. Although our work this far is but a preliminary study, the markedly greater morbidity and mortality rates found in the families of cases of childhood tuberculosis, as compared with those of the general population, are too striking to be without significance, and, I believe, they provide a definite epidemiological basis for the control of tuberculosis in children. Also the preponderance of living cases of tuberculosis in these families over that in the general run of the population is sufficient to warrant special attention to this group in any early-diagnosis program.

It may be argued that such a program requires too large an expenditure of money for adoption by any but wealthy communities. The answer is that funds for safeguarding the health of children are procurable in any community, either from government or private sources. It is one way of breaking the vicious cycle of bacillary or germ transference from parent to offspring that has been going on for countless generations. Any activity that will protect the health and thereby increase the earning power of large numbers of future taxpayers and also, at the same time, lessen the financial burden incident to the care of our tuberculous sick, is an economically sound procedure. The value of health conservation is well shown in the results obtained through welfare work among the employees of large corporations, where it pays dividends in real money.

Summary.—The epidemiological basis for efforts directed toward control during the early years is founded on:

1. The frequent presence of latent childhood tuberculosis in cases of pulmonary tuberculosis (the type that kills) occurring during the 'teens. This small group of between three and four per cent of the entire school population furnishes, in our field, one half of the cases of pulmonary tuberculosis developing before the age of twenty years.

2. Examination of the families of children with the childhood type of tuberculosis frequently discloses the identity of parents and other members of the household with chronic fibroid pulmonary tuberculosis. Such cases are dangerous spreaders of tubercle bacilli. In addition, these families are more fruitful sources of active cases of pulmonary tuberculosis than the other families of a community.

3. Our study indicates that most tuberculous children are infected in the home.

4. A knowledge of prevention can be taught to best advantage during the school days.

5. Funds for carrying on anti-tuberculosis work among children can be obtained with less difficulty than for similar work among any other age group.

6. Examination of large groups of pupils in the 'teens will reveal many early cases of pulmonary tuberculosis.

FOCAL INFECTION IN THE DENTAL TISSUES *

By J. H. MAYO, D.D.S.
Buckhannon, W. Va.

I want to express my sincere appreciation of the privilege of appearing on your program. I consider it not only a personal compliment, but also an honor conferred upon the dental profession. It is taken for granted that the function of the dentist is simply to relieve pain, promote comfort, and employ a system of mechanics for æsthetic purposes; but, being more interested in the medical phase of dentistry, I have watched with unusual interest the advances, step by step, of the important significance of dental infection in prevention and cure of systemic disorders.

Dr. Charles Mayo, several years ago, made the statement that the next great advance in medicine and surgery would have to be made by the dental profession, and asked if the dental surgeon would be equal to it.

The dental profession has accepted the challenge, and by scientific research and investigation, backed by clinical evidence, realizes that infection in the dental tissues is a potent factor in systemic disease. We believe that your success is largely limited with-

* Read before the Central West Virginia Medical Society at Webster Springs on July 17, 1929.

out our help, and we realize that our activity is largely limited without your coöperation.

"Remove the cause" is about the only theory that has stood the test of time without being bombarded or changed, and it looks as if some of us ignore that too often. Many years ago, some one raised the argument that the connection between mouth infection and systemic disturbances was too hypothetical and that they were not related in cause and effect, but were coincidental. The mere fact that there is a great prevalence of mouth disease without associated systemic involvement is no argument. The same is true of syphilis, gonorrhea, and tubercular immunity; still, no one doubts the significance of these infections.

It is not my object to tell you something you do not already know, but to stimulate interest and urge more helpful coöperation.

Dr. Charles Mayo made the statement that people in the future would not die of plagues, as in time past, but would die of focal infection. He made the statement, also, that ninety per cent of all focal infection is above the collar, and that seventy-two per cent of that ninety per cent is found in the dental tissues. A large percentage of infected tonsils is a secondary manifestation to mouth disease. If this be true, where does our responsibility come in as the true guardians of health? It is to the medical and dental professions that suffering humanity stretches forth its hand. You know, better than the dental profession, that pathological conditions do not bob up without a cause. You know that when a patient presents himself with a case of arthritis, neuritis, endocarditis, and dozens of other conditions of inflammation, focal infection is the cause.

A careful survey of those who consider themselves in good health will often reveal the presence of serious systemic disease due to focal sepsis in the teeth or elsewhere.

In a given case, the relationship between oral sepsis and systemic disease requires careful investigation by both the dentist and the physician, and such investigation should not only be careful and painstaking but should also be fortified by definite knowledge of the pathology and clinical manifestations involved.

Both dentist and physician should be familiar with the relationship of focal disease to disease of the heart, blood-vessels, kidneys, joints, stomach, gall-bladder, glands, appendix, and eyes, and certain diseases of the blood, the nervous system, the brain, and the pathology involved.

If you notice mosquitoes in a house that is screened, you know they are getting in somewhere. If there is some place that you know affords the best opportunity for their entrance, it is certainly reasonable to get rid of the openings of that place first. The mouth unquestionably affords the best opportunity for the entrance of germs into the system, so it seems that the logical thing for you to do, in treating your patients, is to see that the mouth is attended to; and if I were to make any specific recommendation for the proper coöperation of physician and dentist, I would call attention to the advisability of personal contact, if possible. The patient can not be trusted with reports, as he is so apt to misinterpret them.

Dr. Gardner, of Rochester, Minnesota, reports, in tabulating one thousand medical cases in which the patients suffered from some form of chronic disease, that he found a marked degree of oral sepsis in sixty-six per cent. In one case which he reports, the patient was a girl, eighteen years old, with a severe case of iritis. After a thorough examination, including, of course, x-rays of the mouth in the absence of all other probable causes, two central incisors were suspected as the cause of the trouble. These teeth were extracted and the girl was dismissed within a short time, entirely relieved, without further treatment. Serum was made from the canals of one of the teeth and injected into a guinea pig. The pig developed a similar lesion in an eye.

Rosenow, in his research work, has produced, in pigs and rabbits, ulcers of the stomach, heart lesions, joint diseases, and dozens of other pathological conditions corresponding to lesions in patients, by injection of serum made from dental focal infection of these patients.

Dr. Cotton, medical director of the New Jersey State Hospital, made this statement: "By recognizing the fact that mental diseases may be the result of oral infection and toxemic poisoning due to this infection, we have been able to restore many patients who, with our former methods of treatment, became chronic patients and remained in the hospital until the time of their death.

"Thus, we have been able to discharge seventy-eight per cent of the patients admitted to the hospital within the nine months, whereas, for a period of ten years, the proportion of discharges to the admissions was only forty-three per cent."

Thoma, in a similar group of cases at the Robert Brigham Hospital in Boston, found alveolar ab-

scesses in eighty-eight per cent of total cases examined.

Crous found alveolar abscesses in forty-four per cent in a series of 124 patients with miscellaneous diseases.

Potter, of Columbia University, in the *New York Medical Journal* of February, 1917, gives a list of thirty-one diseases to which dental sepsis contributes. I think it reasonably possible for mouth sepsis to influence the progress and prognosis of almost every disease, and undoubtedly it does in thousands of cases where mouth disease receives absolutely no consideration as a causative factor.

It has been shown clinically that localized infections in certain structures, such as tonsils, teeth, and sinuses, are more likely to be associated with systemic effects than those in other structures, such as the lung in bronchiectasis or the urinary tract in cystitis and pyelitis. It may be said of these infections in general that the harm resulting from foci of infection is directly proportional to the lack of drainage to the surface and absorption.

"The more virulent the bacteria, the less they need a gross focus for entrance, and the lower their virulence the greater is the factor of focal infection in the production and maintenance of chronic disease. However, there is much clinical evidence indicating that foci of infection, as in tonsils, are often directly responsible for making attacks of acute infectious diseases more severe than they would otherwise be, and for increasing the incidence of complications, such as in diphtheria and scarlet fever. Foci of infection in the upper respiratory tract, as in the tonsils, may also be of epidemiological importance, as is indicated by the suddenness with which the diphtheria carrier state disappears after tonsillectomy.

"A focus of infection that for mechanical or any other reason can not heal or drain, that is teeming with organisms, often in mixed culture, must ever be considered not only as a favorable place of entrance but also as a good place for bacteria to maintain or acquire high and particular invasive powers."

Dr. Rosenow and others, in their study and research of focal infection, were able to produce lesions in animals with bacteria isolated from a focus of infection in a patient, which proved the relationship of a focus of infection to a given lesion. Experiments on animals also proved that the elective localizing power of the bacteria in foci of infection largely determines the location of the systemic lesion or diseases which a person with foci of infection is likely to develop. This does not always occur independently of predisposing factors, since exposure, trauma, fatigue of certain structures, improper food, bad sanitation, lack of sunshine, alcoholism and other excesses, and heredity, undoubtedly lower the resistance and greatly increase the liability to the localization of bacteria when introduced into various parts of the body.

Investigation has proved that conditions of hygiene and diet that were adequate to maintain weight and health in normal dogs were inadequate for those with latent foci of infection. Improper food and sanitation may cause a great deal of harm when bacteria are harbored in foci of infection. It has further been proved that the bacteria in the induced latent focus of infection, besides producing the characteristic disease, appeared to exert general deleterious effects.

Persons affected with a particular disease, such as iritis, ulcer of the stomach, and the like, often have recurring attacks of the disease until it tends to become chronic in nature. It has been found that streptococci having the same specific localizing power were seen in more than one focus in the same person simultaneously, and in some instances at intervals in one or more foci over a long period of time. It is possible that the fluids of the body afford the conditions on which the development of the peculiar localizing power of bacteria depends. Seasons of the year cause marked differences in the severity and incidence of such diseases as arthritis and ulcers.

Bacteria of the same species localize electively, depending on the degree of virulence or other acquired property. Aside from the specific attraction or tropism of certain cells or tissues for certain bacteria, their localization and growth in certain tissues are dependent on the production of toxins or poisons which damage those tissues specifically. Diseases of the heart and vascular system are commonly attributable to focal infection and elective localization.

Talbot says, with regard to hereditary tendencies: "The evidence tends to show that most congenital malformations which are the results of lack of embryonic development are due to injury to the placenta during the early weeks of pregnancy; that the injury to the placenta is due to maternal hematogenous infection of the blood vessels of the placental site, and that the source of the hematogenous infection is generally to be found in the teeth and tonsils.

"The removal of foci of infection, particularly if the focus is situated in tissues which may be readily spared, such as tonsils and teeth, should be practiced in certain instances not only as a curative but as a preventive measure. For general effects as lowered resistance to intercurrent infection as well as specific localization, occurred in dogs in which focal infection has been induced artificially in teeth. This may be regarded as furnishing an experimental basis for the improvement in general health so commonly observed, and for the favorable results obtained in the treatment of diseases such as diabetes, syphilis, and pulmonary tuberculosis following the elimination of foci of infection."

Personally, I have had many patients referred to me, suffering from neuritis and arthritis, and the focus of infection was unmistakably pyorrhea. Treatment would give temporary relief from pyorrhea and relief from the general symptoms would follow. In many instances patients would have a return of pain and mouth examination would reveal a return of pyorrhea. Treatment would be given again for pyorrhea and the same results would follow. I have seen this occur at intervals for a period of two years.

There is not a practitioner of medicine here this afternoon but who, no doubt, knows of many cases where acute symptoms would persist after surgical interference in deep-seated pathology until certain focal infections in the dental tissues were removed.

You can not tell where the primary lesion is in a secondary manifestation. Is it fair, practical or scientific, then, when dealing with a condition that may be caused by septic infection, to ignore mouth conditions?

There was a school teacher in our city who had a slight rise of temperature every day for over five weeks. She was out of school, lost weight, and continued to go down. Her parents insisted upon her giving up her position. Patient was brought to my office, and x-ray examination showed a large rarefied area at the apex of an upper lateral incisor. This tooth was extracted, and further examination revealed a large pocket and destruction of bone. This was on Friday. Patient went back to her school the following Monday. She had no more fever, and gained about twenty-five pounds in less than two months' time.

Other cases could be cited, giving clinical results which prove beyond the shadow of a doubt the direct connection between focal infection in the dental tissues and systemic disease.

CASE REPORTS

SUBCORTICAL SPONGIOBLASTOMA MULTIFORME *

By D. A. MacGregor, M.D.
Wheeling, W. Va.

Mr. F. M. L., age 45, came to the clinic for examination on March 30, 1929. He had not felt well for several months. On the evening of March 16, while working in a shoe store, he had a mild, convulsive seizure. As he laced a shoe for a customer he noticed that his movements were slow and awkward. Finding that the shoe was a little small, he took it to the back of the store and attempted to stretch it. He tried this twice and each time the shoe dropped from his hand. Suddenly, he began to relax and fell to the floor without injury to himself. He was quite unconscious during the attack. There was no frothing, no biting of the tongue, and no incontinence of the bladder or bowels. His pupils reacted to light and to accommodation during the attack. He had sustained clonic seizures of the extremities. He recovered consciousness *sans* hebetude. There had been no previous similar attack.

On March 21 the patient felt as if his head were enlarged. He was in bed at the time and the sensation lasted only about a minute.

On March 23 the original attack was duplicated. He was waiting upon a customer at the time and let a shoehorn slip from his fingers. The attack lasted ten minutes. He felt a slight twist in the left side of the neck, and complained of a mild headache afterwards.

His third attack occurred March 27, when he dropped a light socket twice from his left hand. There was no period of unconsciousness at that time.

In his previous history the patient had no record of encephalitis, meningitis, head trauma, or birth injury. A physical and neurological examination, which was made by Dr. Osterman, was essentially negative. All laboratory and x-ray examinations were negative.

We suspected that the patient was developing epilepsy. We suggested that, inasmuch as he was a man of rather emotional temperament, who had been overworked and harried by worries and responsibilities, it would be well for him to take a long vacation from his usual occupation and at the same time make use of the usual sedative medication. He

* Read at the Staff Conference of the Wheeling Clinic, Wheeling, West Virginia, on October 2, 1929.

was invited to return for reëxamination within a month.

The symptoms progressed unfavorably and the patient was taken to another clinic for examination and treatment. His case was diagnosed as epilepsy and he was kept under observation for a month. At the end of that time his physician suspected the possibility of a brain tumor. On his return home he suddenly became much worse. He developed progressive paralysis, involving the left arm and leg, and disturbance of vision. Severe convulsions immediately preceded his sudden death.

Discussion

DR. A. L. OSTERMAN (Wheeling): The case reported by Dr. MacGregor was an intriguing one. From a diagnostic viewpoint, because of the extreme paucity of neurologic data, it was a most baffling problem. The diagnostic possibilities in this case were resolved, I believe, into one of three conditions:

1. An obscure paroxysmal disorder of the central nervous system of unknown etiology. By this term was meant one of the major types of epilepsy, either symptomatic or idiopathic.

2. A brain tumor presenting no features of localizing value.

3. Hysteria.

The two generalized clonic convulsions were epileptiform in many details. They were associated with loss of consciousness, the *sine qua non* of a true epileptic seizure. However, in a few details, these convulsive attacks differed from the classical *grand mal* syndrome. There were no definite prodromes nor auræ to usher in the attacks; there was no biting of the tongue and no frothing of the mouth; no incontinence of the rectal or vesical sphincters occurred. Recovery was rapid and largely without hebetude.

A careful search for probable foci of infection which might effect a symptomatic epilepsy proved largely fruitless. The sinuses were all clear by transillumination. An examination of the nose and ears proved negative. Five abscessed teeth were found by x-ray, but the removal of these caused no subsidence of the convulsions. A small amount of caseous material and questionable pus was expressed from each tonsil. There were no symptoms referable to other foci in the gastrointestinal or genitourinary tracts. There was no history of birth or subsequent injury to the calvarium and its contents, nor did röntgenograms of the skull reveal any abnormalities. On these grounds, we felt that a diagnosis of symptomatic epilepsy could very properly be excluded.

The idiopathic type of epilepsy due to obscure causes could not at any time be dismissed from the diagnostic schema. The one fact which operated most strongly against such a diagnosis was that these convulsions should so suddenly supervene in a robust, virile man in his forty-fifth year. It is a well-recognized clinical fact that epilepsy rarely makes its initial appearance in the fifth decade of life.

In retrospect it can now be seen that there were a few symptoms pointing to the presence of a very slowly expanding intracranial neoplasm. Examination of the eyegrounds revealed a slight degree of the crossing phenomena in places. There was never any definite evidence of papilloedema or choked disc. Cerebrospinal fluid pressure was equivalent to 190 millimeters of water, a slight elevation in pressure. The spinal fluid cell count, globulin, Wasserman, and colloidal gold tests were negative. The bradycardia with pulse rate of forty-eight per minute may have been an indication of increased intracranial pressure, but its significance is largely detracted from because the patient is said to have had a congenitally slow pulse. There was a slight bilateral increase in the activity of the deep tendon reflexes, but this increase was no more than could be satisfactorily accounted for by the psychogenic tension of any person undergoing examination.

The remainder of the neurologic examination was negative. There were no abnormal attitudes, nor deformities; no abnormal involuntary nor abnormal associated movements. The cranial nerves were intact. Sensation was normal in every respect. Skilled acts, muscle status, speech, and coördination were undisturbed. In brief, the neurologic examination was able to demonstrate only a slight and doubtful increase in intracranial pressure. This increased intracranial pressure was at no time manifested clinically by headache, projectile vomiting, or mental symptoms.

It is to be recalled that each convulsive seizure was initiated by clumsiness and awkwardness of movement, by a dropping of objects, apparently from the left hand. This symptom may have pointed to a compression or irritation of the right motor cortex. There was, however, some confusion on the part of the patient as to whether the left hand was at fault at the onset of the first two paroxysms.

Hysteria as a possible diagnosis in this case could readily be dismissed. The association of a *bona fide* unconsciousness with the convulsions and the signs of slightly increased intracranial pressure decry such a diagnosis. Exposure to nervous-system intoxicants,

such as strychnine, alcohol or phosphorus, may readily have produced a similar convulsive state, but the history easily precludes any etiological rôle on their part. The uremic state can readily be ruled out by history and repeated normal urinalyses.

Inasmuch as the evidence of increased intracranial pressure was slight and well within normal limits, and as localizing neurologic signs were absent, it was our conviction that in this case we had an idiopathic epilepsy, *grand mal* type. Diagnosis was deferred. It was our intention to keep the patient under observation and reëxamine him one month later.

Two valuable suggestions have been derived from this case:

1. Encephalography by the injection of air by the lumbar route or vertriculography should be used routinely in cases of suspected brain tumors which show no localizing signs.

2. Epileptiform seizures making their initial appearance after the fourth decade of life should receive the most painstaking study.

DR. H. G. LITTLE (Wheeling): Post-mortem examination of the brain:

Gross Description.—The calvarium is intact; the dura strips readily from the surface of the brain. The cerebral convolutions are slightly flattened, more noticeable posteriorly on the right. The meninges are normal in appearance. There is no evidence of any purulent exudate in the meninges. The inferior surface of the brain shows no gross pathological lesions.

On section through the right lobe, there is revealed a large area of softening in the posterior lateral half. It occupies parts of the occipital, parietal and temporal lobes, the greater portion being in the parietal lobe. The lesions are not clearly delineated from the surrounding tissue, but the two gradually blend together. In some places there is a definite limit. The center of the mass is soft and reddish-brown in color, which is apparently due to a rather recent small hemorrhage. There are other areas which are reddish-brown in color, while the greater part is a pale gray to a mixture of gray and reddish-brown. The growth extends laterally and superiorly nearly to the cortical gray matter, while the medial limit is the posterolateral border of the lateral ventricle. There is very little firm tissue in the lesion, this usually being along the edges of the growth. Grossly, it suggests brain tumor or cerebral thrombosis with infarction and softening.

Microscopic Examination.—Sections show a tumor growth consisting of cells of different sizes, thrombosed vessels, areas of necrosis, and a definite invasion of the normal cerebral tissue. The cells are spindle-shape, round or oval, with pale vesicular nuclei usually showing one or more nucleoli and often atypical mitotic figures. The intercellular substance varies in degree of density. There are areas which are called false rosettes, where there is a central area of necrosis and the periphery is formed by cells arranged perpendicularly to the necrotic area. This is due to a thrombosis of a small vessel with consequent infarction of the surrounding tissue. The cells are neuroglial in type. There are many small capillaries in the tumor growth. From the softer central portion, the sections show considerable liquefaction necrosis of the tissue. Two sections near the cortical gray matter show several vessels in the tumor which are thrombosed. Several small vessels show a collection of lymphocytes in the Virchow Robin or perivascular spaces.

The neurons are fairly normal. Occasionally one shows an increase in lipoid pigment. There is, however, a definite increase of the neuroglia cells, which appear as rather large ameboid cells with an occasional mitotic figure.

Summary.—A lesion is present in the posterior half of the right cerebral lobe. It is soft, not circumscribed or clearly delineated, with a small amount of hemorrhage and necrosis of the white matter. No thrombosis of the cerebral vessels is found grossly.

The diagnosis based on the various types of neuroglia cells, the mitotic figures with invasion of the normal tissue must be malignant growth. There is some evidence of a chronic inflammation, as shown by the presence of lymphocytes in the perivascular space. However, the main picture is one of tumor.

Diagnosis.—Spongioblastoma multiforme.

In the differentiation of the cells from the primary neural groove there are formed cells called medulloblasts, spongioblasts, and neuroblasts, in addition to the precursors of pineal, choroidal and ependymal cells. Further differentiation develops the neurone from the neuroblasts, astrocytes from the spongioblasts, and the medulloblasts produce oligodendroglia and possibly spongioblasts and neuroblasts.

Bailey and Cushing, on the basis of this differentiation, have identified thirteen types of tumors. They have also shown that, in a general way, the less differentiated types of tumor grow more rapidly and are less favorable in their course than the more highly differentiated types.

In the case under discussion, the microscopical picture is that of a tumor derived from the spongioblast. There are two types of tumors from the spongioblast: the spongioblastoma multiforme and the spongioblastoma unipolare. The latter is rare and is made up, for the most part, of unipolar spongioblasts. The multiforme, being the most common type seen, presents the microscopical picture described.

It is possible that some of the vague symptoms of momentary faintness or dizziness may have been caused by small hemorrhages into the tumor mass. There is some evidence of involvement of a part of the cortex, but whether this would give any clinical symptoms I am not prepared to say.

In conclusion, this tumor would have been difficult to remove surgically if it had been localized. The advancing edge was vague, and whatever relief was obtained would have been temporary.

OVARIAN CYST ON TWISTED PEDICLE

By C. B. PRIDE, M.D.
Morgantown, W. Va.

Twisted ovarian cysts are rarely seen in little girls, but this condition does occur and should always be thought of in any acute abdomen. I wish to report a case of an ovarian cyst twisted on its pedicle in a girl four and one half years old.

The present illness dates back to five days before patient was operated upon. She had been sick three or four days before a physician was called. Her illness began with abdominal cramps, and she was nauseated and vomited twice during the first two days. When first seen she complained of colicky pain in her abdomen, and, as far as could be ascertained, the tenderness was all over the abdomen.

When the pain came on it would last two or three minutes, and during this time the patient would lie with her knees flexed and cry. Her bowels moved with enemas. For a long period of time she would be without pain, and, according to her mother, was perfectly normal. Her past history was negative for any serious illness. Physical examination revealed a well-nourished, well-developed girl four years old, lying flat on her back with her knees flexed, crying out at times with pain. When the attack, which usually lasted three or four minutes, was over, she appeared to be perfectly normal and laughed and played as any normal child. During the last two days she had six or seven of these paroxysmal attacks of pain. The examination, except for the abdomen, was negative. The abdomen was tender all over, especially in the lower portion, and rigidity was fairly marked below her umbilicus. The abdomen did not appear distended. The percussion note was resonant and there was no evidence of fluid. There was no localized tenderness and no mass could be detected. The temperature per rectum was 100 3/5° and the white blood cell count 18,000. Urine specimen could not be obtained. Rectal examination disturbed the patient considerably, and nothing definite was determined by this procedure. It was quite evident that the patient had peritoneal irritation, which accounted for the tenderness, rigidity, and increased white blood cell count; but the source of the peritonitis could not be determined. An exploratory operation was done.

Patient was anesthetized with ether. As soon as the abdominal muscles relaxed a tumor mass about the size of a baseball could be palpated just below the umbilicus. It appeared to be in the midline. It was thought at this time that an ovarian cyst was present.

Midline incision was made. After the peritoneum was opened a mass of a gangrenous nature, about four inches in diameter, was encountered. Considerable cloudy fluid of a serous nature escaped through the opening. This tumor was easily delivered, and it was seen to be composed of the left ovary and left tube. The ovary was about the size of an orange and contained bloody fluid. The tube was about one-half inch in diameter. It was black and contained a considerable quantity of blood. Both the tube and ovary were twisted on the pedicle of the ovary at least one full turn. The tube and ovary were untwisted and the pedicle of the uterine end of the tube doubly clamped and removed by cutting between the clamps. The ovarian pedicle and uterine end of the tube were tied with No. 1 chromic catgut. The right tube and ovary appeared normal.

Microscopic Description.—There is present connective tissue which is of loose texture and evidently edematous. There are seen many small capillaries which are congested, and, likewise, larger thin-walled vessels engorged with blood. There is an accumulation of white blood cells around some of the vessels, consisting of leucocytes and large mononuclears. There is an abundance of extravasated blood, frank hemorrhage, in most of the section. The overlying mesothelium is edematous but intact.

Summary.—Acute abdomen in little girls should always make one think of an ovarian cyst twisted on

its pedicle. The nature of the pain simulated that seen in intussusception, but the duration of the disease and the presence of bowel movements ruled out any such condition. Appendicitis was considered, but the history and nature of the pain, and the absence of any localized tenderness, would scarcely lead one to make the diagnosis of appendicitis.

HEMOLYTIC JAUNDICE

By A. H. GRIGG, M.D.
Beckley, W. Va.

This case report is made chiefly because the condition is rare and secondly on account of the long period of observation. The history is as follows:

White female, age 10 years, weight 59 pounds. Admitted to the hospital first in January, 1925.

Family history: Mother is living and healthy; father healthy, with exception of one attack of nephritis following a rather severe influenza attack; two brothers and one sister healthy; one brother died following ruptured appendix. There has been no history of jaundice or metabolic disturbance, glandular deficiences, or tuberculosis in the family.

The personal history of this patient is that at birth she weighed four pounds, that she slept fairly well, cried most of the day, was breast-fed for eighteen months, began to talk at one year; dentition period not known. At eighteen months, at about the time she was weaned, she had an attack of jaundice; very little was remembered about this attack, but nothing serious developed at that time. She was put on cereal and milk, which apparently agreed with her from the beginning; bowels moved regularly until the age of four years. In September, 1923, she had an attack with the stomach, chief complaint being pain around navel; duration two or three days. There was slight jaundice and some vomiting.

In April, 1925, the patient was first admitted to the Beckley Hospital. Her chief complaint at that time was gastric distress with vomiting, loss of appetite, and jaundice. At that time the child

LABORATORY REPORT
HEMOLYTIC JAUNDICE

Date	Hemoglobin	Number of Red Cells	Number of White Cells	Color Index	Large Lymphocytes	Small Lymphocytes	Neutrophiles	Eosinophiles	Basophiles	Nucleated Reds	Wassermann	Remarks, Widal Culture, etc.
Apr. 28, 1925	60	3,620,000	7,200		4	46	44		1			
Apr. 29, 1925											1	
Apr. 30, 1925	55	2,480,000	8,000		3	50	47			1		
May 4, 1925	70	2,880,000	7,600		3	50	47					
May 11, 1925	60	3,760,000	5,400		4	48	48					
May 25, 1925	60	3,200,000	8,600		4	47	49					
June 15, 1925		2,020,000	5,400		4	47	49					
July 8, 1925	70	2,600,000	4,400		5	37	58					
Aug. 3, 1925	60	2,840,000	6,400		3	37	60					
Sept. 28, 1925		3,220,000	12,400		4	36	80					
Nov. 5, 1925	50	3,000,000	9,000		4	44	52					Coag. 5 min.
Nov. 17, 1925	40	1,640,000	39,600		3	8	89			2		Abscess
Nov. 23, 1929	45	2,440,000	15,000							1		
Sept. 7, 1927	65	2,250,000	18,100	1.5	1	60	39					Coag. 8 min.
Sept. 12, 1927	44.5	2,960,000		.75								
Apr. 24, 1929	60	3,040,000	30,400	.98	3	66	31					
July 21, 1929	36	3,020,000	9,200	.6		19	76	4	1			
Aug. 3, 1929											1	Coag. 3½ min.
Sept. 4, 1929	62	2,100,000	3,900	1.	8	34	58		1	2		
Sept. 16, 1929	42	1,920,000	6,800	1.	11	36	53			2		
Sept. 29, 1929												Coag. 5 min. Spleen removed.
Oct. 2, 1929	57	4,100,000	34,200	.69	2	7	91			2		
Oct. 4, 1929	62	4,320,000	41,700	.72	2	5	93			1		
Oct. 6, 1929	68	4,160,000	26,500	.82	10	5	85					
Oct. 8, 1929	68	3,920,000	27,800	.87	4	23	73					
Oct. 10, 1929	68	4,320,000	24,000	.79	3	19	78					
Oct. 12, 1929	60	3,720,000	22,200	.83	4	15	80		1			
Oct. 14, 1929	58	3,640,000	24,500	.80	6	14	79		1			
Oct. 16, 1929	60	4,000,000	17,800	.75	6	20	73	1				
Oct. 18, 1929	60	4,000,000	10,100	.75	8	29	63					
Oct. 22, 1929	61	4,124,000	28,000	.74	17	3	80					
Oct. 26, 1929	66	4,520,000	11,800	.70	9	29	62					
Oct. 22, 1929	Resistance of red cells to hypotonic salt solution. Initial hemolysis begins in .5% solution. Complete in .38%.											
Nov. 1, 1929	68	4,280,000	10,800	.80	10	32	58					
Apr. 28, 1925	Resistance of red cells to saline hemolysis begins in solution .578%, complete in .374% solution.											
Oct. 30, 1929	Secondary anemic changes present.											
May 4, 1925	Fragility of red cells—hemolysis begins at .6, completed .3, central cells .3.											

was three feet ten inches tall, weight thirty-six pounds. There was a generalized jaundice, most distinct in the skin, sclera being involved to a very slight extent. Eyes and ears negative; the neck showed no enlarged glands. Lungs clear upon percussion and auscultation, but the chest was poorly developed. Abdomen was flat, no distinct rigidity; there was a mass in left hypochondriac area, which was firm, descended well below the costal margin, was not tender, and was smooth in outline. External genitals negative. Extremities negative. No distinct glandular enlargement. Laboratory reports showed a negative Wasserman. X-ray of the chest showed lungs clear; there was a mass in upper hypochondriac area—diagnosed as enlarged spleen. After a few days' rest in bed the gastric symptoms subsided; the patient ran a normal temperature, pulse, and respiration. X-ray at that time showed the spleen to be twice normal size. The first blood count was made; red blood cells 3,620,000, white blood cells 7,200; hemoglobin 60. Patient remained in the hospital about a week, was discharged with a diagnosis of possible hemolytic jaundice. Patient's family was advised to seek a donor, and if the condition did not rapidly improve, have spleen removed.

In November, 1925, the patient had another attack of vomiting accompanied by marked nausea. This continued for about three weeks, and the patient was then admitted to the hospital and a diagnosis of appendiceal abscess made and the abscess drained. Patient stood the operation very well and made an uneventful recovery. Since recovery from the appendiceal abscess the patient has had two mild attacks of tonsillitis. In April she had another attack of gastric disturbance accompanied by nausea and vomiting with increase in jaundice. During all these disturbances the patient has remained jaundiced a copper color. She has grown in height but has remained thin. Mentally, she is alert, and when able has attended school; had progressed with her work in a normal manner. Her stools have been normal and have been of normal color and consistency. Urine has shown bile only occasionally.

On September 4, 1929, the patient was admitted to the hospital with the idea of having the spleen removed. At this time she weighed 59 pounds. General physical condition is about as described above. Considerable difficulty was found in obtaining a donor, but one was finally procured and transfusions were done. The transfusions, however, were of very questionable value; apparently the hemolytic condition present destroyed the transfusion within a few hours.

On September 30th, under gas-ether anesthetic, the spleen was removed through an abdominal incision, slightly to the left of the mid-line; it was found to be five times its normal size, rather firm in consistency, with somewhat thickened capsule and few adhesions. No great difficulty was experienced in removing the organ. Patient stood the operation well, and immediately following was transfused. Post-operative convalescence was delayed by a slight infection of the skin. For the first few days there was considerable nausea, slight vomiting, and at times rather extreme pain in the abdomen. Her blood count was made every second day, and a very distinct improvement in both red blood cells and hemoglobin was noted. There was the usual leucocytosis following splenectomy for a few days, but this has subsided.

The patient was discharged from the hospital on November 2, 1929, the wound entirely closed, the patient eating a normal diet, having no jaundice, and walking unassisted.

The blood reports are rather interesting, as they were carried out over a period of four years. The rapidity with which the blood stream returned to normal after the splenectomy is worthy of note, as also is the resistance to salt solution. The marked increase in leucocytes on November 17, 1925, was at the time the patient developed the appendiceal abscess and was operated.

ABSTRACTS

The Therapeutic Value and Dangers of Intravenous Administration of Sodium-Phenyl-Ethyl Barbiturate (Sodium Luminol) and Other Barbituric Acid Derivatives

SOMA WEISS, M.D. (*American Journal of the Medical Sciences*, September, 1929; pages 390-404).—The following discussion is based on experimental and therapeutic observation, and upon a critical analysis of the literature. The intravenous administration of the barbituric acid derivatives has a distinct therapeutic value; nevertheless, it is not without danger if used indiscriminately.

Many preparations have been put on the market under various trade names, all of which are closely related in their chemical, pharmacologic and therapeutic actions.

The pharmacological effect in animals is summarized. The author notes that there are marked

fluctuations in the depth of sleep in the same animals, and individual variations between different animals. The state of the central nervous system is one of the important factors in determining the intensity of effect. Motor or sensory excitement acts antagonistically, while a depressed state of the nervous system acts synergistically.

The author presents evidence to suggest that man is more susceptible to the barbituric acid derivatives than animals, and that in man a relatively smaller percentage of the fatal dose produces analgesia and narcosis. The effects on man, as studied by the author, were made from personal experiences and from a study of the records of cases admitted with acute poisoning due to one or another of these derivatives. The fatal doses of barbituric acid derivatives in a man can not be estimated accurately from this data. The estimated fatal dose of veronal is 10 to 16 grams, while that of luminol is from 4 to 6 grams. Sodium luminol, injected intravenously in doses of from 0.4 to 1.2 gm., at the rate of 50 mg. per minute in a 10 per cent solution, stops convulsions, produces muscular relaxation, and induces sleep with considerable regularity. The narcosis after such large doses may be superficial and the analgesic effect may be only partial.

The intravenous and intermuscular administration are preferred to oral route because the effects are instantaneous and the dosage can be regulated better. The signs and symptoms are the same by all routes. In intermuscular injections the substance enters the blood-stream in from five to thirty minutes.

This author concludes, from a review of the literature and from animal experimentation, that the routine use of the intravenous hypnotic dose of the barbituric acid derivatives for surgical anesthesia, as well as for the inducement of sleep of days' duration in certain psychosis, is dangerous. At the present time these derivatives can not replace the volatile anesthetics for routine surgical anesthesia.

In certain patients with severe status epilepticus, eclampsia, grave toxic reaction from local anesthetics, convulsions due to cerebral hemorrhage, tetanus, and cocaine poisoning, the intravenous administration of the barbituric acid derivatives is of distinct value from a therapeutic standpoint.

With every therapeutic dose of barbituric acid derivatives sufficiently large to produce deep and persistent sleep, there is a potential danger of fever, circulatory collapse, secondary hypostatic congestion of the lungs, bronchopneumonia, and, occasionally, lobar pneumonia.

The mechanism of the action of the barbituric acid derivatives is different from that of ether, nitrous oxide, and chloroform.

The dose administered to a patient should be determined by the individual behavior of the subject during the slow intravenous administration of the hypnotic. The author states that it should be remembered that a hypnotic dose of any barbituric acid derivative entails potential danger for the patient. —*R. J. Condry, M.D., Davis Memorial Hospital, Elkins, W. Va.*

The Objects of Digitalis Therapy

HAROLD J. STEWART (*The American Heart Journal*, Vol. V, No. 1 (October, 1929), p. 1).—

The author briefly reviews the trend of knowledge of digitalis therapy since first used by Withering 143 years ago. Chronologically, the criteria for the use of digitalis have been: the presence of edema (Withering, 1785), its effect on the heart muscle (Kreysig, 1816), the presence of certain varieties of valvular disease (Corrigan, 1832), and, in our own day, cardiac rhythm, with especial reference to auricular fibrillation (Mackenzie, 1911), a return to its effect on muscle (Cohn *et al*, 1915) and, finally, on cardiac output (Harrison and Leonard, 1926).

Cohn and Stewart, in 1928, found that the volume output of the heart per minute decreases as the result of a twofold action: First, it increases cardiac tone, decreasing the size of the heart, thereby decreasing cardiac output; second, the extent of the ventricular contraction is increased, thereby increasing cardiac output, the latter therefore being a function of both these actions. The use of the drug in pneumonia is discussed, although the mode of its action is still in dispute.

In summary, Stewart states that, if cardiac irregularity needs to be controlled, muscle tone increased and cardiac contractions strengthened, we use digitalis. Further study must be made to ascertain how benefit may be recognized, how it occurs, how it may be measured, and when it may be expected.

M. C. B.

AUTHORS' ABSTRACTS

Progressive Spinal Muscular Atrophy of the Werdnig-Hoffmann Type

GEORGE M. LYON, M.D., Huntington, W. Va. (*Southern Medical Journal*, September, 1929, pp. 839-844.)—A case of progressive spinal muscular atrophy of the Werdnig-Hoffmann type is presented

with studies in the electrical reactions of the nerves, reported for the first time. A detailed pathological study shows the spinal cord findings to be distinctly different from those found in the spinal cords in poliomyelitic infections. The photograph of the patient is one of the best of this condition to be found in medical literature.

Of interest in the case are the following:

1. It is of a familial nature, an older brother and probably an aunt having died with the same malady.

2. It occurred early in life and had an early fatal termination.

3. It was characterized by a flaccid paralysis of the muscles of the pelvic and pectoral girdles, of the back and of the accessory muscles of respiration. The paralysis advanced distally, proximal groups being involved first.

4. The paralysis was steadily progressive until death ensued from paralysis of the muscles of respiration.

5. The fingers and the toes were not paralyzed until relatively late in the condition.

6. The mentality was clear until the end.

7. The atrophy of the muscles was progressive, although probably hidden by subcutaneous fat at first. Toward the end the proximal groups of muscles of the extremities and the muscles of the back were markedly atrophied.

8. The response of the nerves to stimulation over the motor points was greatly diminished early. Finally there was no response to stimulation over these points. Direct stimulation of the muscles produced a response after stimulation of the motor points gave no response.

9. The muscular atrophy was secondary to the nerve and spinal atrophy.

10. The pathological findings showed a marked primary atrophy of the anterior horn cells of the spinal cord and of the anterior roots. The involvement of the anterior horn cells extended from the cauda equina to the medulla and was symmetrical. The degeneration of the peripheral nerves and of the anterior roots was secondary to the primary atrophy of the anterior horn cell. There was a simple atrophy of the muscles of the pelvic and pectoral girdles, of the back, of the abdomen, of the neck and of the extremities, and of the accessory muscles of respiration.

11. The etiology of the malady is not known. There are two theories as to its cause. The first is that there is some toxic factor active in intrauterine or early extrauterine life. The invariably symmetrical character of the condition would lend support to this theory. The second theory is that it is a congenital deformity (or deficiency) of the anterior horn cells. The fact that the lower motor neurones seem to function normally for a time before symptoms occur would argue against this view.

12. It is in all probability a distinct disease entity and not an unusual form of some of the more common neurological conditions.

The Action of Digitalis in Heart Failure

Clinicians have generally accepted the pharmacologic evidence that digitalis causes a more vigorous and larger ventricular contraction. But it is difficult to accept the view that a muscle such as the heart, which can not rest after being overstimulated, is improved by being forced to beat harder. It has now been shown that the efficiency of the heart, or its capacity for doing a fixed amount of work with least oxygen consumption, varies inversely with its diastolic volume. It was shown further that digitalis causes the heart to decrease its diastolic volume while carrying a constant load. Thus, digitalis reduces the energy requirement of the heart or permits it to do more work with the same expenditure of energy.—*Journal A. M. A.*, August 17, 1929.

Acquired Pollen Hypersensitiveness

In order to account for acquired pollen hypersensitiveness, clinicians usually assume that at some previous time the patient has inhaled, has swallowed or has otherwise been inoculated with a specific pollen. According to this hypothetic etiology the patient should be equally hypersensitive to the individual proteins of this pollen, assuming, of course, that these proteins are all equally antigenic. That such patients are not thus equally hypersensitive appears from recent work. This work throws doubt on the common assumption that acquired pollen hypersensitiveness is due to previous exposure to a specific pollen, and equal doubt therefore on the rationale of current methods of antiallergic therapy.—*Journal A. M. A.*

TUBERCULOSIS ABSTRACTS

Bacillus Calmette-Guerin

Professor A. Calmette, of Pasteur Institute, isolated a certain strain of bovine tubercle bacilli in 1908 and, during a period of 13 years, attenuated them by 230 passages on a medium of potato glycerin and bile. After experimenting with cattle,

he applied the vaccine to babies, and he and other workers have by this time vaccinated more than 200,000 infants. Within ten days after birth he gives by mouth a recently prepared microbic emulsion (which contains *living* bacilli) in three doses at intervals of 48 hours. This is easily absorbed by the intestinal mucosa. The bacilli are carried by protoplasmic cells which have phagocytic powers into the lymphatic system, the lymph glands, the spleen, and

FIG. 1.—"R" colony of BCG, not virulent for guinea pigs. (Courtesy S. A. Petroff.)

the bone marrow. The vaccines are not digested but behave as harmless parasites and in a short time elaborate the defensive substances.

Calmette has gathered an imposing array of statistics from health departments, clinics, and physicians. His interpretations of these figures indicate that vaccinated infants of tuberculous parents are greatly more resistant to tuberculosis than the unvaccinated, particularly if vaccination is carried out during the first ten days of life. Furthermore, he interprets his statistics to mean that the general infant mortality is decidedly less among vaccinated than among unvaccinated children. For example, in one group of 3,808 vaccinated children in tuberculous surroundings, 3.1 per cent died (from all causes) during the first year of life. The corresponding death rate for France of non-vaccinated children was 8.5 per cent, or more than twice as high. It is confidently claimed that the injection of Bacillus Calmette-Guérin causes no unfavorable reactions, though rarely a slight rise in temperature is observed.

What is the duration of immunity acquired by this method? Calmette states it is longer than was at first supposed, and believes that the immunity is maintained and reinforced by the subsequent infections which a child encounters in a tuberculous environment. Apes vaccinated in 1923 were still refractory to the infection through cohabitation with artificially infected apes in 1927.—*The Preventive Vaccination of Newborn Infants Against Tuberculosis by Means of the BCG.* A. Calmette, *Bull. de l'Union Internationale contre la Tuber.*, Vol. V, No. 1, January, 1928.

Criticisms of Bacillus Calmette-Guérin.—Petroff, of the Trudeau Sanatorium, challenges Calmette's conclusions. He points out, among other things, that Calmette made no clinical and x-ray studies of the vaccinated infants, and that the mortality rate is not a suitable criterion to determine the protective value of the vaccine. He states that Calmette selected his cases to some extent and that bad risks were not vaccinated. He quotes Greenwood and Rosenfeld as having analyzed Calmette's statistics and found them faulty on several counts.

More specifically, Petroff questions the claim that Bacillus Calmette-Guérin is without danger. He has, during the past four years, studied the biological characteristics of four separate cultures of BCG. "Every one of the cultures occasionally produced progressive tuberculosis in guinea pigs and the lesions could be transferred to healthy animals." By cultivating BCG on fluid media, he succeeded in dissociating two distinct types of colonies; one waxy, with small wrinkles, with clear-cut, rounded and raised outlines, the other less common, slightly

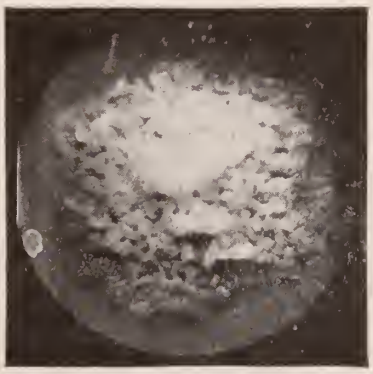


FIG. 2.—"S" colony of BCG isolated by Petroff, which proved virulent for guinea pigs. (Courtesy S. A. Petroff.)

smaller, with irregular wrinkles. He designated these cultures as *R* and *S*, respectively. The *R* colony produced tubercles when injected into guinea pigs, but these tended to heal. The *S* colony produced progressive tuberculosis. Petroff claims that BCG is not "fixed" and that a virulent strain can be dissociated from it in the laboratory. Recalling that mutability is one of the characteristics of bac-

teria, he warns that BCG, harmless when injected, may in time regain virulence.

In conclusion, he says: "We have now reached the crossroad and must decide as to what course we must pursue in our campaign against tuberculosis. Shall we tuberculize the whole world by adopting Calmette's method of vaccination with living micro-organisms . . . or shall we continue those preventive methods adopted some years ago in this country and Canada, and so successfully employed in reducing the mortality from tuberculosis and preventing infection in infants?"—*A New Analysis of the Value and Safety of Protective Immunization with BCG.* S. A. Petroff, *Amer. Rev. of Tuber.*, Vol. XX, No. 3, September, 1929.

Bacillus Calmette-Guérin in New York City.—Kereszturi reported experiences with the use of BCG on 183 babies in New York City. She concludes that infants of tuberculous mothers promptly vaccinated by mouth do not acquire tuberculosis as readily as do the unvaccinated. She admits that the total number is small and not sufficient on which to base substantial conclusions, but is of the opinion that BCG vaccination is relatively simple and harmless, that it gives some immunity, and that the degree and duration of immunity can not be determined as yet. —*Oral Vaccination with BCG on Human Beings in New York City.* Camille Kereszturi, *Amer. Rev. of Tuber.*, Vol. XX, No. 3, September, 1929.

A Clinician's Viewpoint.—Baldwin concludes that Bacillus Calmette-Guérin is not without its danger, but questions if that danger is greater than the risk a child runs in acquiring tuberculous infection in the natural manner. He inclines to the view that, while BCG has some virtue, it is at present an unnecessary instrument in the general battle against tuberculosis in this country. Assuming that tuberculous infection is gradually declining among children in this country, perhaps in the same ratio as is the death rate, he points out that there may soon be a generation of people who have acquired no immunity against tuberculosis, at which time some such artificial protection as is afforded by BCG may prove to be a very good substitute for the naturally acquired immunity on which we depend today. He favors more investigation before universal application of BCG is made in the United States.

To the frequently asked question as to whether it is the vaccination or the separation of the child from its mother that protects the infant, Calmette's answer is that the separation is but a brief one and not sufficient of itself to protect the child. But, said Dr. Baldwin, the mere fact that such separation is effected implies that the mother has been apprised of the danger of exposing the infant to her tuberculosis and has been given a detailed explanation as to why the separation is necessary. Consequently, when the child is returned to its mother after a period of a few weeks, the mother will doubtless continue to exercise those precautions which have been impressed upon her; whereas, mothers whose babies have not been separated from them are not so likely to be aware of the danger of close contact.—*Discussion, New England Conference on Tuberculosis,* Hartford, Conn., April 26, 1929.

Emphysema Simulating Cardiac Decompensation

WILLIAM B. KOUNTZ, H. L. ALEXANDER, AND DONALD DOWELL (*Journal A. M. A.*, 9: 1369, Nov. 2, 1929).—In a well-written, extremely brief article the authors present evidence that the symptoms dyspnea, cyanosis and edema, usually attributed to cardiac failure in emphysematous patients, can not be accounted for in that manner. They believe that the dyspnea and cyanosis can be attributed to lowered vital capacity which results in a reduced oxygen content of the arterial blood. The edema is ascribed to two factors: increased peripheral venous pressure and anoxemia.

Their study is based upon clinical, pathological and experimental evidence. Clinically, sixty-six patients with advanced emphysema were examined. In all cases there was marked reduction in vital capacity. In only five cases the electrocardiograms revealed right ventricular predominance. In two of these cases necropsy revealed no cardiac enlargement. The six-foot röntgenograms in eight cases showed cardiac enlargement. Of the sixty-six patients, nine came to necropsy. In eight of these, there was no evidence of right or left ventricular dilatation or hypertrophy, or of excessive fibrosis. Experimentally, emphysema was produced in sixteen dogs. As the condition developed, intrapleural pressure rose, to be followed by a rise (compensatory?) in peripheral venous pressure. This, they state, suggests that as the intrapleural pressure rises the suction action of the normally negative intrapleural pressure is lessened, thereby blocking the venous return, which is reflected in an increased peripheral venous pressure. M. C. B.

THE WEST VIRGINIA MEDICAL JOURNAL

JAMES R. BLOSS, EDITOR-IN-CHIEF . . HUNTINGTON

ASSOCIATE EDITORS

J. HOWARD ANDERSON, MARYTOWN — WALTER E. VEST, HUNTINGTON — C. A. RAY, CHARLESTON — HARRY M. HALL, WHEELING

THE JOURNAL issued on the first of each month. Entered as second-class matter January 1, 1926. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917. Authorized July 24, 1919.

Subscription to Members ..... $2.00 Per Year
Subscription to Non-Members ..... $3.50 Per Year
Single Copy ..... 50 Cents

OFFICERS

President:
H. M. HALL ..... Wheeling

First Vice-President:
B. F. BONE ..... Moundsville

Second Vice-President:
W. C. SWANN ..... Huntington

Third Vice-President:
J. A. DUFF ..... Martinsburg

Executive Secretary:
MR. JOE W. SAVAGE ..... Charleston

Treasurer:
T. MAXFIELD BARBER ..... Charleston

Delegates to A.M.A.:
JAMES R. BLOSS (1928-29) ..... Huntington
HENRI P. LINZ (1928) ..... Wheeling

Alternates:
A. A. SHAWKEY (1928-29) ..... Charleston
HARRY M. HALL (1928) ..... Wheeling

COUNCILLORS

Chairman of the Council for 1928:
R. H. DUNN ..... South Charleston

First District:
C. W. WADDELL (2-year term) ..... Fairmont
C. G. MORGAN (1-year term) ..... Moundsville

Second District:
C. H. MAXWELL (2-year term) ..... Morgantown
C. H. HALL (1-year term) ..... Elkins

Third District:
JOHN FOLK (2-year term) ..... Bridgeport
I. D. COLE (1-year term) ..... Clarksburg

Fourth District:
ROY BEN MILLER (2-year term) ..... Parkersburg
W. E. VEST (1-year term) ..... Huntington

Fifth District:
J. HOWARD ANDERSON (2-year term) ..... Marytown
H. G. STEELE (1-year term) ..... Bluefield

Sixth District:
R. H. DUNN (2-year term) ..... South Charleston
H. A. WALKUP (1-year term) ..... Mt. Hope

¶ All original articles for THE JOURNAL must be made to it exclusively. Communications and items of general interest to the profession are invited from all parts of the state. Notices of deaths, removals from the state, changes of location, etc., are requested.

¶ Our readers are requested to send marked copies of local newspapers containing matters of interest to members of the medical profession. Name of sender should be given.

CONTRIBUTIONS TYPEWRITTEN

¶ Contract with present printer specifies that all articles, communications, etc., MUST BE TYPED.

ADVERTISEMENTS

¶ Advertising forms will go to press not later than the tenth of each month. All advertisements must conform to the standard established by the Council of Pharmacy and Chemistry of the American Medical Association.

WOMAN'S AUXILIARY

Mrs. R. V. Shanklin, Gary ..... President
Mrs. T. H. Harris, Parkersburg ..... Vice-President
Mrs. W. C. Swann, Huntington ..... Secretary
Mrs. W. D. Simmons, Slab Fork ..... Treasurer

Councillors

Mrs. C. G. Morgan, Moundsville, first district; Mrs. Ralph Maxwell, Morgantown, second district; Mrs. H. D. Price, Parkersburg, third district; Mrs. J. R. Bloss, Huntington, fourth district; Mrs. A. G. Rutherford, Welch, fifth district; Mrs. E. S. Dupuy, Beckley, sixth district.

Delegates to Woman's Auxiliary of A. M. A.

Mrs. R. V. Shanklin, Gary; Mrs. B. S. Preston, Charleston. Alternates—Mrs. George Jeffers, Parkersburg; Mrs. W. B. Scherr, Morgantown.

STANDING COMMITTEES

Medical Defense Committee

C. G. Morgan, Moundsville, chairman; H. A. Walkup, Mt. Hope; H. G. Steele, Bluefield.

Committee on Scientific Work

O. B. Biern, Huntington, chairman; G. H. Barksdale, Charleston; A. G. Rutherford, Welch.

Public Policy and Legislative Committee

R. A. Ireland, Charleston, chairman; R. H. Walker, Charleston; James McClung, Richwood; C. R. Ogden, Clarksburg; D. A. MacGregor, Wheeling.

Committee on Medical Education

John N. Simpson, Morgantown, chairman; W. T. Henshaw, Charleston; W. S. Fulton, Wheeling.

Committee on Professional Relations

John R. Shultz, Charleston, chairman (5-year term); A. G. Rutherford, Welch (1-year term); W. R. Goff, Parkersburg (2-year term); Hugh G. Nicholson, Charleston (3-year term); E. P. Smith, Fairmont (4-year term).

Workmen's Compensation Committee

W. A. MacMillan, Charleston, chairman; C. A. Ray, Charleston; John E. Cannaday, Charleston.

Committee on Public Health

David Littlejohn, Charleston, chairman; John Thames, Charleston; Will McLain, Wheeling.

Surgical Section

Robert King Buford, Charleston, chairman; B. I. Golden, Elkins.

Eye, Ear, Nose and Throat Section

I. D. Cole, Clarksburg, chairman; C. C. Jarvis, Clarksburg.

Hospital Association Officers

R. A. Ireland, Charleston, president; J. S. Turk, Wheeling, president-elect; B. I. Golden, Elkins, first vice-president; W. E. Vest, Huntington, second vice-president; Mr. Joe W. Savage, Charleston, secretary-treasurer.

PRESIDENT'S PAGE

IN THIS, the last letter we shall write, we repeat: To us the scientific side of medicine is a marvelous human achievement. No burying a talent in a napkin. Ten given. Ten added. Our attitude, one to another, has not quite kept apace. At Martinsburg one celebrated man said: "Cattiness is a human attribute. A medical man can not escape his share." Still, we think we have actually reduced it. However, in this mechanical age we go about seeking some elaborate system to render us, one preoccupied with courtesy to another. It can not be done, since all that comes from within.

Last week we saw three things that turned our mind on the subject. *Televox*, electrical man who, by the use of sound vibrations, is made to perform a number of striking feats. The play, "Courage," in which a small boy of eleven manages to save his spendthrift mother and three brothers and three sisters from humiliation and ruin by the simple expedient of being kind to a thoroughly disliked old spinster who reciprocated by suddenly dying and leaving him half a million. The Southern California-Nôtre Dame football game with an audience of 120,000. Two thousand years ago this arena would have held its occupants spellbound with an exhibition of unexampled cruelty, with blood flowing in streams while Death sauntered in and about, quite deliberately acting as referee. But on Saturday, November 16, a group of powerful men fought a valiant game of prowess, using their heads and bodies in a superb show of struggle. It was far more exciting than seeing humans die, because, after all, dying is dull and forbidding. Rules and penalties made the game preëminently fair. Solace was immediate for minor wounds. Ambulances awaited, and, beyond them, hospitals. The medical profession stood by. What made the change in the arena in 2,000 years? What stood out in the boy that made him different? What is it the intriguing robot lacks, though Dr. Crile feels we are all but millions of cells with positive and negative areas? The philosophy of a man who was born in this month on the twenty-fifth day nearly 1,930 years ago!

Doubtless it may seem a gratuitous gesture for us to speak of this in a medical journal, but we believe it has a mighty direct application to professional relations just as it has had to the arena. Sometimes we are heretic enough, be the opprobrium what it may, to wish He had never come to us by way of a religion. That His advent could have been such that His after life would have been accepted equally by Jew and Gentile, Catholic and Protestant, Unitarian and Mohammedan, Buddhist and Confucianist, as a simple exposition of a great personage who evolved a plan of escape from pettiness, meanness, and all the other misadventures that almost drive us to despair, and included in their stead a philosophy that made life more tolerable and offered us the foundation on which our asylums, hospitals, modern ideas of medical practice and healing the sick, rests. Consider this. Hippocrates antedated the Christian philosophy, it is true, but no other form of ethics or political doctrine ever had hospitals or organized benevolent conceptions of medical service. Reject Christ in any way you may; nevertheless, He will loom up as the world's powerful figure, simply by measuring what his followers have brought about.

To us—and we can not conceive it as a sacrilege—Christ could have been at the football game. He walked among the fishermen, did He not? We closed our eyes and opened them again as we were in the stadium, with the fanciful idea that the 120,000 were all doctors. We could see the man whose philosophy had changed a bloody field of death into a superb spectacle of healthy human struggle, despite its occasional casualties, arise and say: "My friends! You, above all, carry out indeed what I understood. See to it you do not flaw your splendor with unseemly smallness. It would take so little for you to understand each other better!"

Hail and farewell!

HARRY M. HALL.

EDITORIAL

World Insurance Again

Three or four months ago the JOURNAL carried a short editorial concerning the activities of the World Insurance Company in this state. The World Insurance Company, located at Omaha, Nebraska, has gone to considerable trouble to solicit West Virginia doctors by direct mail. In the previous editorial it was pointed out that a report from the state insurance commissioner on this concern was extremely unfavorable, and that the company itself had no license or authority to do business in this state. According to the insurance commissioner, it is against the law in West Virginia to purchase insurance from the World concern.

A second form letter, calling attention to a special "Silver Anniversary Offer to Physicians and Surgeons," has recently been sent out by Mr. Amos Thomas, president of the World Insurance Company, to the members of the West Virginia State Medical Association. The offer is most attractive, and has considerable to say about non-cancellable policies, aviation provisions, guaranteed income, etc. As usual, the recipient of the letter is asked to "send no money."

It was thought wise to again call attention to the offer of the World Insurance Company because of its activities in this state and because of the warning of the state insurance commissioner.

Councillors and Secretaries

For the first time since 1926 the county society secretaries will meet for an annual conference at the executive offices in Charleston on December 30, 1929. The meeting will be held on the same day and in conjunction with the annual session of councillors. The council meeting will be held on the morning of December 30 and the conference of secretaries that afternoon.

Dr. Harry M. Hall, of Wheeling, president of the West Virginia State Medical Association, has urged that all councillors and county secretaries be present at Charleston on December 30. He is particularly anxious to have all of the county secretaries present, in order to form a strong secretarial organization. County society activities for the coming year will be planned at this meeting, and plans will also be worked out for the promotion of more efficient laws governing medical practice.

The meeting of councillors has for years been an annual affair. The purpose of the meeting is to wind up the affairs of the state association for 1929 and to plan the activities and program for 1930. The councillors now in office, as well as the new councillors who will take office on January 1, 1930, are expected to attend. Dr. R. H. Dunn, of South Charleston, chairman of the council, is anxious to have a full attendance to dispose of a number of important matters that will be brought before the councillors on December 30.

ANNOUNCEMENTS

Hospital Meeting

The fourth annual meeting of the Hospital Association of West Virginia will be held at the Kanawha Hotel in Charleston on December 2, 1929. Dr. Bert Caldwell, of Chicago, executive secretary of the American Hospital Association, will be the principal speaker. Further information concerning this meeting can be found in this issue of the JOURNAL in the section devoted to hospital news.

American Pharmaceutical Association

The semi-annual meeting of the American Pharmaceutical Manufacturers' Association will be held in Washington, D. C., on December 16 and 17, 1929, it has just been announced by Mr. C. W. Warner, chairman of the publicity committee. Definite action on a proposed advertising campaign for 1930, of which the slogan will be "Keep Well—Consult Your Family Physician," will be taken at the Washington session.

The meeting of the first day will be taken up largely with problems of an executive nature and a general discussion of ways and means of obtaining greater efficiency and economy in distribution. The second day will be devoted primarily to meeting members of the various governmental bureaus and departments with which the members of the association come in contact. Senator George H. Moses, of New Hampshire, will be the principal speaker at the luncheon on the second day of the meeting.

Dr. Hume Accepts Position

Dr. B. L. Hume, formerly of Huntington, has recently accepted the position as medical director of the Dellhurst Sanitarium at Mentor, Ohio.

OBITUARY

L. F. Kornmann, M.D.

Dr. L. F. Kornmann, of Clarksburg, died at his home there on October 1, 1929. He was 62 years of age and for many years had been an active worker in the affairs of the Harrison County Medical Society and the West Virginia State Medical Association, of which organizations he was a member.

Dr. Kornmann graduated from the College of Physicians and Surgeons of Baltimore in 1895, and was licensed the same year to practice medicine in West Virginia. He first located at Gypsy, W. Va., but later moved to Clarksburg and entered into private practice there.

W. A. Thornhill, M.D.

Dr. W. A. Thornhill, of Charleston, died suddenly on November 14 of a heart ailment. He was 49 years of age and had been a member of the Kanawha Medical Society and the West Virginia State Medical Association for twelve years. Dr. Thornhill complained of feeling ill in his office on the afternoon of November 14, and died four hours later in a Charleston hospital. He was a native of Appomattox County, Virginia, and came to Charleston in 1917.

Dr. Thornhill is survived by his father and stepmother, of Washington, D. C.; his widow, two daughters and one son. Funeral services were held from the family residence at 1519 Lee street, Charleston, on the afternoon of November 16, and interment was made in Sunset Memorial Park.

The deceased was widely known throughout the state. He seldom missed a state medical meeting, and took an active interest in both the county and state medical associations. The sudden death of Dr. Thornhill came as a sad blow to his many friends and associates in southern West Virginia.

COUNTY SOCIETY NEWS

Hancock County

The Hancock County Medical Society, which dropped out of the state association last year, was officially reinstated on November 4, when an excellent meeting was held at the emergency hospital of the Weirton Steel Company at Weirton. The speakers included Dr. T. G. Simonton, of Pittsburgh, a former president of the Pennsylvania State Medical Society; Dr. Harry M. Hall of Wheeling, president of the West Virginia State Medical Association, and Mr. Joe W. Savage, executive secretary of the state association. Dr. Simonton talked on "Referred Pain and Respiratory Troubles," while Dr. Hall and Mr. Savage spoke on the work of the county societies and the state medical association. The scientific program was concluded with the showing of the Stuckert film on obstetrics.

The November 4 meeting of the Hancock County Medical Society was unusually well attended, with approximately 35 doctors present. Many of them were visitors from Wellsburg, W. Va., and Steubenville, Ohio. Dr. J. E. Fisher, of New Cumberland, president of the newly organized society, presided at the meeting. Following the program, a buffet supper was served.

F. B. HARRINGTON, Secretary.

Mercer County

The regular monthly meeting of the Mercer County Medical Society was held in the office of Dr. J. R. Vermillion at Princeton on the evening of October 30, with a good attendance. The program was opened with a presentation of clinical cases by Dr. C. L. Todd and Dr. Carl W. Smith, of Princeton.

Scientific papers were presented by Dr. David B. Lepper, of Bluefield, on "Progress Made for a Better Milk Supply in Bluefield"; by Dr. R. R. Stuart, of Bluefield, on "Vomiting"; and by Dr. S. J. Kell, of Bluefield, on "Disease in Relation to Crime."

Among other matters that came up during the business meeting was a discussion of the resolution adopted at Martinsburg last May, abolishing the medical defense fund of the West Virginia State Medical Association. The Mercer County Medical Society adopted a resolution, at the October 30 meeting, requesting the state association to reinstate the medical defense fund.

H. G. STEELE, Secretary.

Kanawha County

An interesting meeting of the Kanawha Medical Society was held in the auditorium of the Public Library building, Charleston, on the evening of November 5, with approximately thirty members in attendance. The scientific essayist of the evening was Dr. J. Huber Wagner, of Pittsburgh, who gave a paper on "Treatment of Compound Fractures." This was an excellent paper and brought

out much valuable discussion. The discussion was opened by Dr. John Bankhead Banks and Dr. Hugh Robins, of Charleston.

RUSSEL KESSEL, Secretary.

Monongalia County

The regular monthly meeting of the Monongalia County Medical Society was held in the Junior High School library in Morgantown on the evening of November 5, with an excellent attendance. The program consisted of an excellent paper by Dr. John Holloway, of Cleveland, Ohio, on the subject of "Brain Tumors." The paper brought out considerable discussion from the members present.

G. R. MAXWELL, Secretary.

Lewis County

Approximately thirty doctors from Fairmont, Clarksburg, Buckhannon, and Weston attended the regular meeting of the Lewis County Medical Society which was held at the public library building in Weston on November 12, 1929. The scientific essayists were Dr. R. A. Ireland and Dr. R. H. Walker, of Charleston. The scientific program was also featured by a film on gastric ulcer operations, furnished through Dr. A. F. Lawson, of Weston.

Dr. Ireland read an interesting paper on "Conditions of the Heart." Dr. Walker's paper dealt with early diagnosis of conditions in the right abdomen and a discussion of asepsis. Both papers were discussed at considerable length by the members and visitors present.

A. F. LAWSON, Secretary.

Ohio County

Two interesting and instructive meetings of the Ohio County Medical Society were held during the month of November, the first on November 1 and the second on November 15. Both meetings were held in the Elks' Club in Wheeling, with Dr. Howard T. Phillips, president, presiding.

Dr. J. O. Rankin, of Wheeling, was the scientific essayist on the November 1 program, talking on the subject, "What Europe Offers for Post-Graduate Study." His talk was discussed by Dr. Frank LeMoyne Hupp, Dr. J. R. Caldwell, Dr. W. P. Sammons, and Dr. L. B. Farri.

Dr. James I. Johnston, of the University of Pittsburgh, Pittsburgh, Pa., was the essayist at the November 15 meeting, giving a paper on the subject of "Hypertension." His paper was discussed by Dr. D. A. MacGregor and Dr. John T. Gilmore, both of Wheeling.

H. W. BOND, Secretary.

Mercer County

The Mercer County Medical Society held its regular monthly meeting at Matoaka on the evening of November 19, with an excellent attendance. The meeting was held at the Methodist Episcopal Church in Matoaka and was preceded by a supper with the Matoaka Kiwanis Club, after which the doctors present adjourned to the meeting room.

Clinical cases included "Cardiac Irregularities" by Dr. M. B. Caldwell, of Matoaka, and "Congenital Absence of One Hand in a Child; Possibly Paternal Inheritance," by Dr. B. S. Clements, of Matoaka. Dr. W. D. Fitzhugh, of McComas, gave an interesting talk on his impressions of the last meeting of the Interstate Post-Graduate Ahsembly at Detroit.

The scientific papers consisted of the report of a case of "Potential Eclampsia," by Dr. Fitzhugh; a paper on "Factors Influencing the Development of the Nervous System in Infancy and Childhood," by Dr. Andrew E. Amick, of Bluefield, and a paper on "Injuries and Dislocation of the Internal Semi-Lunar Cartilage of the Knee," by Dr. Ward Wylie, of Princeton.

H. G. STEELE, Secretary.

Kanawha County

A resolution in connection with the sudden death of Dr. W. A. Thornhill on November 14 was adopted at the meeting of the Kanawha Medical Society held in the public library building at Charleston on the evening of November 19, 1929. The resolution was presented by a committee composed of Dr. C. A. Ray, Dr. John E. Cannaday, and Dr. J. Ross Hunter. A copy of the resolution appears herewith:

WHEREAS, the members of the medical profession of Kanawha county and of West Virginia were deeply grieved to learn of the sudden death, on November 14, of Dr. W. A. Thornhill; and,

WHEREAS, Dr. W. A. Thornhill was a member in good standing of the Kanawha Medical Society, the West Virginia State Medical Association, and the American Medical Association; and,

WHEREAS, by his ethical conduct and his strict adherence to the duties of his profession, he had endeared himself to the entire medical personnel of this county; and,

WHEREAS, his life was a model of patience, charity and benevolence toward his fellow-man; therefore, be it

Resolved: That the Kanawha Medical Society, representing the organized medical profession in this county, extend to the family and to the many friends of the deceased this resolution of sympathy and condolence; and

Be it further resolved that a copy of this resolution be mailed to the family of the deceased, and that a copy be presented to each of the newspapers in Charleston and to the WEST VIRGINIAI MEDICAL JOURNAL.

(*Signed*)
KANAWHA MEDICAL SOCIETY.
By C. A. RAY,
JOHN E. CANNADAY,
J. ROSS HUNTER.

PUBLIC HEALTH

Endemic Typhus Fever

According to studies conducted by the United States Public Health Service, the evidence thus far adduced indicates that there is endemic in the United States a disease which is clinically indistinguishable from the mild typhus occurring during interepidemic periods in the Old World and in Mexico. The relationship of this disease to typhus is further borne out by serological similarities. The Weil-Felix reaction is positive. The value of this observation in establishing the relationship of the disease in this country with that of the Old World has been modified by the recent discovery (Kerlee and Spencer, 1929) that the Weil-Felix reaction is positive in Rocky Mountain spotted fever, a disease which, though it belongs to the typhus group, is immunologically distinct.

Observations in experimental animals are interpreted as meaning that the endemic typhus of the United States has common origin with the "tabardillo" of Mexico. The typhus which has been occurring in our eastern seaports does not depend upon direct importation from across the sea. It belongs to the North American continent.

In addition to the peculiarities of the virus, the disease in this country manifests certain epidemiological characteristics which are in contrast with those generally attributed to the typhus of the Old World. They relate principally to the mode of transmission. These considerations have led to a tentative rejection of the human louse as the principal vector and of man as the principal reservoir of the disease in this part of the United States and the search for some other mode of transmission.

In typhus fever it has been shown by Nicollé and others that, besides the chimpanzee and the monkey, certain small rodents are susceptible to the virus; *i.e.*, guinea pigs, rabbits, rats (white and gray), mice (white), and the gerbille. In a recent publication (1926) Nicollé reports a second series of passages of typhus virus through twelve generations of white rats.

The question arises whether, in the endemic typhus of the southeastern United States, a reservoir of the disease may not exist other than in man—a rodent reservoir with accidental transmission to man through the bite of some parasitic, blood-sucking insect or arachnid. Such a hypothesis is compatible with the epidemiological characteristics which have been presented, namely, (1) the uneven focal distribution of the disease; (2) its sporadic occurrence; (3) its apparent lack of direct communicability from an infected person; (4) its association with the place of business rather than with the home, particularly with those premises upon which foodstuffs are handled or stored; (5) the recurrence of cases on the same premises after considerable intervals of time, and (6) its seasonal incidence.

Obviously, the rodents upon which suspicion immediately falls are rats and mice, and the parasitic intermediaries which are first suspected are fleas, mites, or possibly ticks. Further investigations of this problem are being made.

Danger From Rabbits

With the hunting season well under way, many persons are questioning the advisability of cleaning and eating rabbits which have been killed. Inquiry at the state health department revealed the fact that while there is a basis for the fear, precaution will forestall trouble. According to health authorities, about one per cent of all rabbits are infected with tularemia.

This disease affects the spleen or liver of the rabbit and is passed on to man when dressing the animal or through the bite of an infected fly or other insect. The infection usually enters the body through a cut, sore or abrasion on the hand, causing fever, swelling of the glands, and in some cases resulting in death. Rubber gloves should be worn by all those who dress rabbits as a precaution against this disease. Rabbit meat, if thoroughly cooked, is harmless. A temperature of 133 degrees Fahrenheit

destroys the germs. Precautions should be taken to see that the meat is thoroughly cooked, as underdone portions have been found to contain the germ.

Tularemia has long been known throughout the country, but it was not until within the past few years that the method of its transfer to man was discovered by Dr. Edward Francis, of the United States Public Health Service. This disease was first discovered in California in Tulare county, from which it took its name. Reports now show that it has invaded every state except the New England group.

Several cases of tularemia were reported last year to the U. S. Public Health Service from Cabell county, in this state. So far as is known, these were the only cases and resulted from carelessness in handling an infected animal or in eating rabbit meat that was not thoroughly cooked.

Tularemia has been found to affect not only wild rabbits but also hares, squirrels ,rats, field mice, chipmunks, opossums, woodchucks, and other small animals.

Infantile Paralysis

The United States Public Health Service has stated recently, in a conference with state health officers, that throughout the greater part of the country it may be expected that about one paralytic case of infantile paralysis per 100,000 population will occur between the first day of December and the first day of June each year, and in the other six months, about 4 to 14 cases. The maximum incidence, an average of 2 cases in 3 weeks per 100,000, is reached in mid-September.

Ever since 1916, health officers have looked with especial concern on a definite rise during the month of June, but there have been several examples of a notable increase in reporting which was not paralleled by any such actual increase in incidence. In the warmer parts of the United States fewer cases occur, though the distribution follows about the same proportion by seasons as in the North. On the Pacific coast the rise appears to begin a few weeks earlier and reach a less abrupt peak somewhat later, with a relatively high prevalence maintained longer than is usual elsewhere. It would seem that other places which have a comparatively even temperature range throughout the year, with a slightly retarded maximum, should show the same characteristics.

The measures through which might be expected a real diminution of incidence are those which diminish human contacts in general, but the drastic closing of all places of assembly is justifiable only with a very high incidence of, say, five or ten times the usual, and even in such a case the long incubation period would make it likely that in a restricted community the actual spread of the infection had begun to diminish before the alarm was sufficient to resort to such extremes.

Every help should be given to the medical profession and the public to assist in the prompt and accurate diagnosis of the cases. Pamphlets are available for distribution to physicians to refresh their memories on the early suspicious and characteristic signs of the disease.

Organization for treatment of preparalytic cases by convalescent serum is one of the first measures to be considered. Since, however, this is adapted more for metropolitan areas than for widely scattered settlements, it is probable that in most cases it will be a function of medical societies, medical schools, and local health authorities, rather than of the state. In any case, favorable as the results appear to be, it must be remembered that the method is still on trial, and every effort possible should be used to secure its practical evaluation.

Probably the greatest good that the state department of health can do is in the prevention of deformities and crippling as an aftermath of recognized paralytic cases. The early treatment should certainly be under the control of the local physician. In connection with the circularization and publicity, to aid in the early diagnosis, emphasis should be placed on the necessity of absolute and prolonged rest in bed, in a position to forestall and prevent any tendency to deformity, by fixation if necessary. There comes a time in practically every case, however, and it may come very soon, when the prop care becomes too irksome for the family to carry on without the moral support and stimulus of some such agency as a consultant orthopedist with nurses or physiotherapists particularly skilled and trained in this disease; and it is a rare family which can afford the expense of such prolonged, continuous, and special skill unless the treatment is supervised under some such auspices as those of the state or municipal department of health. Adequate hospitalization of these cases is out of the question. A useful pamphlet on muscle training is available as a reprint from the U. S. Public Health Service.

HOSPITAL NEWS

State Hospital Meeting

The fourth annual meeting of the Hospital Association of West Virginia will be held at the Kanawha Hotel in Charleston on December 2, 1929, with Dr. Bert Caldwell, of Chicago, executive secretary of the American Hospital Association, as the principal speaker. Dr. Caldwell will speak at the convention banquet and will also take part in the program during the afternoon session.

The meeting will get under way at 10 o'clock on the morning of December 2 with the addresses of welcome and the response by Dr. B. I. Golden, of Elkins. Dr. R. A. Ireland, of Charleston, will then deliver the president's address. The morning session will close with a paper by Dr. A. G. Rutherford, of Welch, on the subject, "What the Surgeon Expects from the Hospital."

Dr. W. S. Fulton, of the Wheeling Clinic, Wheeling, will open the afternoon meeting, and he will be followed by Mr. F. E. Green, of Cleveland, Ohio, who will talk on "Hospital Hazards." Mr. Green is chief of the hospital division of the Ohio Inspection Bureau. Dr. Caldwell will also speak during the afternoon meeting.

Dr. Walter E. Vest, of Huntington, will serve as toastmaster at the evening banquet. Among the banquet speakers will be Dr. Caldwell, Dr. J. R. McClung of Richwood, Miss Martha M. Russell of Parkersburg, Dr. J. E. Wilson of Clarksburg, Mr. J. S. Turk of Wheeling, president-elect of the association, and Dr. W. A. MacMillan of Charleston.

With such an unusually attractive program, the hospital association meeting this year is expected to be the best in the history of the organization.

FROM OTHER JOURNALS

Methyl Chloride Deaths

Between August, 1928, and August, 1929, twenty-nine cases of poisoning by commercial methyl chloride gas occurred in the city of Chicago; ten of these twenty-nine individuals died. All of these cases, except three which occurred in a plant where methyl chloride refrigerators are manufactured, developed in kitchenette apartments where leaks were discovered in the refrigerating system used.

It has been estimated that there are 75,000 domestic refrigerators in Chicago in which methyl chloride is used as the refrigerant. The menace to human life is at once apparent. This occurrence reminds us that another source of poisonous gas has come as a result of the growing complexity of modern industry and luxury. It creates a very important problem in preventive medicine.

Fortunately, the United States Bureau of Mines, under the direction of Dr. R. R. Sayers, the United States Public Health Service, and a committee appointed by the board of trustees of the American Medical Association at the request of the house of delegates of the recent Portland meeting, have already attacked the problem. In addition, it has attracted the attention of several individuals and departments of preventive medicine. The result has been the appearance of several preliminary contributions to the subject.

Occasion has been taken to review all of the available data concerning this new domestic hazard elsewhere in this issue.—*International Medical Digest.*

More Nostrum Advertisements

Two months ago we called attention to the large number of patent medicine advertisements that are appearing in some of the newspapers of the state, and more particularly to some glaring examples of the type of patent medicine advertisements that are being published in New Orleans. Last night's edition of one of these contemporaneous sheets contained nearly a dozen advertisements of nostrums. Some of these so-called remedies could not be labeled bad or dangerous except for the fact that they are secret preparations inherently dishonest in their claims, but probably not capable of doing very much harm. On the other hand, we can not possibly conceive of a more wretched example of dishonorable handling of advertising than to publish statements to the effect that gallstone colic can be treated successfully by some remedy or another of which nothing is known, that high blood-pressure can be cured by taking medicine internally, that a goiter may be removed by drugs, that the pangs of childbirth can be controlled by local application on the abdomen, that bladder irritations irrespective of the cause can be cured by medicine taken by mouth. Aside from the question of ethics concerned in publishing such statements even under the guise of advertisements, one wonders how the readers of an occasional conscienceless newspaper could stomach some of the nasty, disagreeable, and obnoxious statements made in these advertisements.—*New Orleans Medical and Surgical Journal.*

Racial Differences in Response to Mydriatics

Belladonna or the related compounds, atropin and homatropin, are most commonly used in ophthalmological practice for routine eye examinations, though a number of other drugs have been found to dilate the pupils. Ephedrin, alone and in combination with other drugs, has been suggested for the same purpose, as having a quicker and less lasting action. In ten per cent solution after local instillation it uniformly produces mydriasis in Caucasians. While it dilates the pupil, it causes almost no change in accommodation.[1 2]

Difference in the response of Chinese and Caucasion eyes to ephedrin and other mydriatics has been reported in the past few years.[3] The effects of a number of mydriatics upon white persons, Chinese and Negroes have been compared, and dilatation measured under standard conditions. Solutions of ephedrin which dilated Caucasian pupils two millimeters or more, produced an increase of only 0.5 millimeter in Chinese and Negro eyes. The same differences were obtained with cocaine and euphthalmine. Caucasians were most susceptible to all these, and Negroes least, the Chinese being intermediate.[4]

Knowledge of many diseases and remedies owes its development to the fact that animals and human beings respond alike to the same chemical or bacteriological irritants. Immune sera which are therapeutically or prophylactically beneficial to animals are usually as effective for human beings. The internal secretions, pituitrin, insulin, estrin, thyroxin, generally react in animals as in human beings. Studies on racial difference in response to therapeutic measures have been few.

There is a difference in racial susceptibility to disease, as has been shown by many mortality statistics. Jews are more susceptible to diabetes than are Gentiles. Negroes have a higher mortality rate for tuberculosis. The disease sickle-cell anemia is rarely or never found in white persons, while the Negro race is rather susceptible to it. Maud Slye has produced strains of mice practically immune to cancer, and other strains in which cancer always develops. Draper[5] writes of the "ulcer type" and "galbladder type" of man.

It has been noted that the Negro's skin is more resistant to mustard gas than the skin of the white man; that inhabitants of certain eastern countries, among them the Hindus and Chinese, have lower basal metabolisms than Americans and Europeans. Chinese students were found to have a blood-pressure twenty to thirty millimeters lower than is observed among Europeans.[6]

Animals withstand much larger quantities of atropin than do men, and an especial degree of tolerance to atropin is met in the herbivora. Difference in response of light- and dark-eyed persons to mydriatics in general has been reported, though it is denied that white- and brown-eyed rabbits respond differently.

In clinical practice, drugs are usually administered with similar intent to all races. In the South, where the Negro population is large, it is useful to recall that the Negro's response to mydriatics may be slow, and that the usual drugs may be ineffective. Further investigations may show a greater resistance of Negroes, or higher threshold of response to many of the ordinary medicaments, which would necessitate a revision of the standard dosage.

1. Chen, K. K.: Comparative Study of Ephedrin, Pseudo-Ephedrin, and Beta-Phenyl Ethylamine. *Arch. Int. Med.*, 39: 404, 1927.
2. Howard, H. J., and Lee, T. P.: Effect of Installations of Ephedrin Solution Upon the Eye. *Proc. Soc. Exp. Biol. and Med.*, 25: 150, 1927.
3. Chen, K. K., and Poth, E. J.: Racial Difference of Mydriatic Action of Ephedrin, Cocaine and Euphthalmine. *Proc. Soc. Exp. Biol. and Med.*, 25: 150, 1927.
4. Chen, K. K., and Poth, E. J.: Racial Differences as Illustrated by the Mydriatic Action of Cocaine, Euphthalmine, and Ephedrin. *Jour. Pharm. and Exp. Ther.*, 36: 429, 1929.
5. Draper, George: Human Constitution. Philadelphia. W. B. Saunders Co., 1924.
6. Cadbury, W. M.: Blood-Pressure of Normal Cantonese Students. *Arch. Int. Med.*, 30: 362, 1922.

—*Southern Medical Journal.*

The Nicotine Content of Tobacco

About a year ago the Connecticut Agricultural Experiment Station published a report which showed that the claim that certain tobaccos have been "denicotinized" was largely without foundation, for it was found that there were, among ordinary tobaccos, brands in which the nicotine was either not in excess or was actually lower than that present in the processed tobaccos sold under the implied claim that they were practically free from nicotine. The station has now issued a further report, giving the results of the analyses of tobaccos of both the processed and unprocessed types. Altogether, eleven brands of unprocessed pipe tobacco have been analyzed and found to have an average total nicotine content of 2.04 per cent; four brands of so-called denicotinized pipe tobacco gave an average total nicotine content of 1.3 per cent; ten brands of ordinary unprocessed cigars gave an average total nicotine content of 1.51 per cent, while seven brands of processed, or so-called denicotinized, cigars gave an average total nicotine content of 0.95 per cent. In the cigarette field, forty-six analyses were made of ordinary unprocessed products, giving an average total nicotine

content of 1.77 per cent, as compared with 1.09 as the total nicotine content of twelve so-called denicotinized brands. From this work it can be seen that while some of the so-called denicotinized products contain less nicotine than the ordinary unprocessed brands of the same class, they still contain material quantities of nicotine. The main difficulty in determining whether or not the claims made by manufacturers of so-called denicotinized tobacco products are reasonable lies in the failure to know the amount of nicotine in the various tobaccos *before* they were processed. However, this work permits the tobacco user to arrive at some worth-while conclusions on this point. It should not be forgotten, also, that nicotine is probably not the only harmful element in tobacco smoke, and that Dixon has reached the conclusion that moist tobacco produces much more serious effects than dry tobacco, and has even suggested that the water content of tobacco might be a more harmful factor to the smoker than the nicotine content of the tobacco, and that the condition of the tobacco and the form in which it is smoked are probably more important factors in determining the amount of nicotine that the smoker gets than is the actual nicotine present in the original tobacco.—*Journal A. M. A.*, Sept. 21, 1929.

Partnership General Practice

This article is concerned with a restricted group of two or more physicians serving a community in general practice, and is not to be confounded with the group or clinic as generally understood It must be apparent to all that a partnership of two or more kindred spirits in the practice of medicine, at least in the smaller communities, must be an ideal way to practice medicine and infinitely better for the physicians concerned than to practice as rivals in the community. The older practice of medicine has always been looked upon as largely a personal matter in which confidence in the physician was the most important. In these days of scientific medicine, this personal equation, while still a matter to be reckoned with, is not any more considered all-important.

Service to the community is the all-important matter. This can best be rendered by a system that will produce the best results with the least delay and inconvenience, and with a minimum of effort. Let us assume a two-physician community in which the tributary trade territory is a ten-mile radius. Practicing separately, each physician may have a patient in the same certain neighborhood, ten miles out, requiring daily attention, requiring the efforts and time of both to attend, whereas, if the two physicians are united in their efforts, one can make the several calls with little more time and effort than is required to attend to one patient. In the meantime the other partner can minister to patients in another neighborhood or attend to calls in town or office. Everybody concerned is benefited, a prompter service results, with less expenditure of effort, and more people can be served.

Daily consultations in the office in the absence of the patients are possible and profitable to physicians and patients alike. In emergencies requiring an assistant or an anesthetist, calling the other partner is most convenient and agreeable.

People, knowing that two competent physicians work as a unit, will be drawn to them in greater numbers when medical service is sought, thus increasing the income. Two men working together can successfully conduct, if they will, an emergency hospital suited to the needs of the community. They can the more fully equip themselves with x-ray and other laboratory apparatus and become more proficient in using it. In such a partnership each one should be able to qualify in some special line of work in addition to the usual routine, and in this way they increase their usefulness to the community and incidentally increase the income. It is likely that two or more men practicing together have less annoyance from bad accounts than would either practicing singly.

The opportunities for rest, recreation, postgraduate study, attendance on medical society meetings, alternately, if need be, is easy as compared to the man who practices by himself.

The country doctor is not passing; but he must adapt himself to more up-to-date methods of procedure to attain the best results professionally, socially, financially, and in the hearts of the community, and the outline above indicated offers a solution of the problem. The country doctor must not much longer stand in the light of his own possible progress.—*Nebraska Medical Journal.*

Tighten Up County Societies

Now that the vacation season is about over and the weather is about to settle down to something more pleasant to contemplate, we should get down to work in earnest. Not the least of our responsibilities, in the affairs of which we should work with intelligent concentration, is the county medical society. Very naturally, we are prone to give our

strictly personal affairs first consideration and give some close attention to picking up the loose ends of our practice once more, and trying to collect a little of the money due us, in order to satisfy the demands of the bank for repayment of vacation loans, and the like, but we should not forget that the county society either is, or should be, a bulwark in our professional lives, without which we would be in a sad plight, indeed.

"Oh," we say, "the society does not do anything but wrangle, and rehash old stuff, anyway, or perhaps give some favorite son a chance to brag on his own accomplishments. What's the use?" Perhaps the complaint is well put, at that; but if so it is our own individual fault. It should not and need not be so. Perhaps Dr. Smith did rehash a lot of old textbook stuff at the last meeting, in his paper on a threadbare subject, and maybe Dr. Jones bragged unduly about a case he had recently been successful in treating, and no doubt there was more or less wrangling at the society the last time it met, or the time before the last; but maybe that is not the whole story. Perhaps there was something said by Dr. Brown that was worth while, and perhaps something was said that made us think of something that we should consider, and, at any rate, we might ourselves have added something of value to the occasion if we had only been enterprising enough to do so. Perhaps we were not offered a place on the program. Well, doubtless we should have been asked, but maybe we should have offered to present something. The secretary, or the program committee, in our experience, is always looking for an opportunity to bring out latent talent or to give any member who has something to offer a chance to offer it. And we must not forget that in the beginning there is a good deal of chaff in the wheat and no way has ever been found to get the wheat without running the grain through the thresher.

But there is a real reason why the county society should take hold and go ahead vigorously. President Dr. Dildy is planning big things for us this year, and his plans all hinge on the county societies, under the supervision of the councillors. If county societies are not active or in a position to become so, and if there is not a concrete militant organization, the plan is going to fail to that extent. Every bit of influence and power the county society can muster should be brought to its meetings and poured into the hopper. It will all be needed.

Our legislative program may be sleeping, but it is not dead. It may be allowed to remain thus quiescent, but, on the other hand, it may be aroused to early and vigorous activity. The program has failed heretofore very largely because county medical societies have not been active, and active at the right time. We must either abandon our program or put it over. If we abandon it we will lose a great deal of the influence that we have accumulated during the past good many years, which has been considerable. If we do not abandon the program and then fail to put it over, we will likewise lose. We would seem to be between the horns of a dilemma, legislatively and politically speaking.

This is a warning order, as it were. The call to arms will come later, and the battle cry soon thereafter. Let us get busy.—*Texas Journal of Medicine.*

Diphtheria Immunization

An inexperienced chemist, a dozen years ago, entered a research laboratory and was told that he was to study enzymes. "I suppose the first thing to do, then," he said, feeling very logical, to the amusement of older students of the subject, "is to isolate one." This, of course, has not been done yet, but much has been learned of enzyme action in complex mixtures of enzyme and substrate. Similarly, biological methods have given useful information about other mixtures of reacting materials, such as bacterial cultures and immune sera, and vitamin-containing foods.

Diphtheria toxin-antitoxin mixtures have been very valuable in the prevention of diphtheria. Although they are constantly being purified and the content of horse serum is being reduced, they still contain many unknown and unneeded substances. When toxin-antitoxin is given to a patient, many substances which have nothing to do with immunity to diphtheria are likewise given.

In France and in several other foreign countries vaccination with Ramon's anatoxin, or toxoid, a simpler material, is used to prevent the disease. The filtrate from a diphtheria culture is incubated with formaldehyde, which destroys most of its toxic properties but leaves its antigenic qualities unimpaired. The resulting non-toxic material, when injected into a patient, induces the formation of diphtherial antibodies, and a negative reaction to the Schick test. No antitoxin or immune horse serum is given when the toxoid is used.

The Dicks[1] found that toxoid in three doses was

a better immunizing agent than even five doses of a good toxin-antitoxin mixture. Ninety-four per cent of their cases were immunized by the toxoid, while only eighty-two were immunized by toxin-antitoxin. They found the toxoid harmless.

Weinfeld and Cooperstock,[2] of the University of Michigan, likewise report favorable results with toxoid. Ninety-two per cent of their cases became Schick-negative after two doses of toxoid. They observed that local reactions to toxoid were less frequent than local reactions following injections of toxin-antitoxin, but general reactions to the former were more frequent. Both general and local reactions to toxoid were rare in young children. The incidence of reaction was high in persons who gave a history of allergy and a pseudo-reaction to the Schick test. The Michigan physicians believe that toxoid as an immunizing agent is superior to toxin-antitoxin, and that it should be preferred in the prophylaxis of diphtheria.

The preparation of an agent which immunizes with no admixture of animal serum is a scientific advance. That Ramon's is the best possible method of rendering diphtheria toxin harmless is not to be assumed. Larson[3] and associates, of Minneapolis, have found that certain bacteria are very sensitive to agents, such as soaps, which lower the surface tension of the medium in which they grow. He suggests that bile soaps in the intestines may be very useful in detoxifying the quantities of bacterial products there. He observed that tetanic and diphtheritic toxins were instantly detoxified in solution with sodium ricinoleate, but their antigenic properties remain unimpaired. Pneumococci and streptococci became non-infectious after treatment with sodium ricinoleate. A ricinoleated diphtheria toxin they believe to be valuable for immunization. This modified toxin, like the formaldehyde treated toxin, would have the advantage of being free from horse serum.

Improvements in the method of freeing the toxin from its dangerous properties and making it safe for injection will no doubt continue. Perhaps eventually the diphtheritic antigen will be isolated from all contaminating substances. Meantime, a number of investigators have reported that Ramon's toxoid is more effective in the prevention of diphtheria than the toxin-antitoxin mixtures commonly employed in America. The simplest and most efficient available immunizing agent should be used in public health work.

1. Dick, G. F., and Dicks, G. H.: Immunization Against Diphtheria. *Journal A. M. A.*, 91: 1901, June 8, 1929.

2. Weinfeld, G. F., and Cooperstock, M.: Comparative Effects of Diphtheria Toxoid and Toxin-Antitoxin as Immunizing Agents. *Amer. Jour. Dis. Child.*, 38: 35, July, 1929.

3. Larson, W. V., and Eder, H.: Immunization Against Diphtheria. *Journal A. M. A.*, 86: 998, 1926.

—*Southern Medical Journal.*

Belgian Radium Monopoly

The Belgian monopoly of radium, indispensable in the modern treatment of cancer, has led to such a revolt in medical circles that it is confidently expected that American money will soon be put into radium mines in Colorado and Utah, and possibly also in West Africa.

Just how cheaply radium can be produced from American ores in Colorado and Utah will not be known until the Bureau of Mines does considerable more experimental work. Provision for such experimentation will be made in a bill to be introduced in the House this fall by Representative Edward T. Taylor, of Colorado. At present, it is believed that it probably would cost at least $22,000 per gram to recover radium from American ores.

It is charged that Belgian interests produce it for $10,000 per gram, while selling it for $70,000 per gram.

In West Africa it is claimed that radium can be extracted from pitchblende for $8,000 per gram by a new German process. Efforts are now being made to interest American investors in these African pitchblende fields, it is said.—*Science Service.*

Education vs. Propaganda

In any field of endeavor, when there is a desire to arouse public consciousness, two distinct methods of procedure appear—propaganda and education. That physicians may be guilty of using propaganda is an open question, not at the expense, however, of ethical procedures nor intentionally, but by virtue of the fact that we have not been able to differentiate propaganda methods from those of true educational procedures, nor sense their respective value.

Everett Dean Martin, writing on our "Invisible Masters," condensed from the *Forum* (March 29) by the *Readers' Digest* (April), gives food for thought and guidance to medical groups interested in arousing the public interest in individual and county health problems, to-wit: "The educator aims at the slow process of development; the propagandist at quick results. The educator tries to tell people how to think; the propagandist what to think. The educator strives to develop individual responsibility;

the propagandist mass effects. The educator wants thinking; the propagandist action. The educator fails unless he achieves an open mind; the propagandist unless he achieves a closed mind."

With this differentiation before us, it would appear that education of the public in matters pertaining to indivdual health and health problems will be more lasting, more permanent, than a mass attack with propaganda. If this be true there can be only one proper approach to acquainting the public and the individual with health needs, and that is through systematic courses of instruction in our private and public schools, colleges, and universities. Of course, this applies to those individuals engaged in the pursuit of academic training. For those who are beyond reach of the school and college, the hope for adult education rests with our efforts through the medium of the public press, current periodicals, plays, movies, the drama; yea, even the pulpit itself.—*Pennsylvania Medical Journal.*

GENERAL NEWS

The Power of Suggestion

The story is told that the manager of a New York hotel recently engaged a clipping bureau to send him everything they found concerning mice jumping out of tea-pots at fashionable afternoon affairs. He later explained his reason for this unusual request. He said that a lady of some social position but little means had engaged a room in his hotel. After a few weeks her bill ran so large that he became afraid it would not be paid. On the last day of her visit she entertained in her room and ordered, among other things, a pot of tea. As she opened the pot of tea, a mouse jumped out of it. In order to keep down the unpleasant publicity that might have resulted, the hotel manager allowed the lady to depart without paying her hotel bill. In engaging the services of the clipping bureau, he merely was interested to know whether or not the lady would work the same trick on some one else.

The same trick may or may not have been worked again in New York, but a situation somewhat similar has arisen in our own state within the past few weeks. The situation in West Virginia involves hot-water bottle burns rather than mice jumping out of teapots.

Several months ago a lady was admitted to a well-known West Virginia hospital with a gangrenous appendix. She was operated upon and the operation was successful. A short time after the lady left the hospital she brought suit to recover $5,000 for injuries she claimed to have received from the application of a hot-water bottle immediately after the operation. Time went on; the case was brought to trial in October, and the lady was given a judgment for $2,000 against the hospital.

On the day after the judgment for $2,000 was returned in favor of the lady, a second suit was entered by an entirely different party against the same hospital, "to recover for burns received from the application of a hot-water bottle immediately after an operation."

December Council Meeting

The year-end council meeting of the West Virginia State Medical Association will be held at the association offices in Charleston on December 30, 1929, it has just been announced by Dr. Harry M. Hall of Wheeling, president. The council meeting will be held on Monday morning, December 30, and the annual conference of county society secretaries will be held that afternoon. A luncheon for the councillors and secretaries will be held by the association between the two meetings.

Dr. Hall has stressed the importance of the year-end council meeting and has urged all councillors to be in attendance, including those who were elected to take office on the first of January. All pending 1929 business affairs will be wound up at the December 30 meeting, and plans made for the activities of the association during the coming year.

Considerable interest has also manifested itself in the conference of secretaries, and an excellent meeting is expected. This conference at the end of the year is the first one that has been held since 1926. A number of important matters will be taken up by the county society secretaries, including plans for perfecting a medico-political organization in West Virginia.

Government Vacancies

The United States Civil Service Commission announces the following open competitive examinations: Senior medical officer (internal medicine), $4,600 a year, and junior medical officer (interne), $2,000 a year.

Applications must be on file with the Secretary of the Fourth U. S. Civil Service District, Washington, D. C., not later than December 26. The examinations are to fill vacancies in Saint Elizabeth's Hospital, Washington, D. C., and vacancies occurring in positions requiring similar qualifications.

The entrance salaries are $4,600 a year for the senior grade and $2,000 a year for the junior grade. Higher-salaried positions are filled through promotion. Competitors will not be required to report for examination, but will be rated on their education, training, and experience. Full information may be obtained from the Fourth U. S. Civil Service District, Washington, D. C., or the Secretary of the U. S. Civil Service Board of Examiners at the post office or customhouse in any city.

Tobacco Advertising

United States Senate Bill 1468, introduced by the Hon. Reed Smoot on June 4, 1929, would amend the Food and Drugs Act of June 30, 1906, to cover tobacco and tobacco products. It would further empower the Food, Drug and Insecticide Administration of the U. S. Department of Agriculture to control the advertising of the products coming under its authority as well as the labels and literature inclosed with the packages. This bill is aimed to establish a means of controlling the advertising of the American Tobacco Company which is so widely addressed to young people and appears to be increasing the smoking of cigarettes at an alarming rate.

According to an address of Mr. Smoot delivered before the Senate June 10, 1929, a number of states have adopted or are considering restrictive legislation, as follows: "In Illinois a bill has been introduced in the general assembly for the restriction of advertising which urges young people to smoke cigarettes. A similar measure is before the senate of that state. A bill to prevent the advertising of cigarettes through the radio and on the billboards, introduced February 12th, is now before the Idaho State Senate. The laws of the State of Maine have put tobacco in the class with poisons and narcotic drugs. In the State of West Virginia, tobacco is placed by statute in the class with opium. In Michigan a bill has been offered in the lower house against advertising designed to promote the sale of cigarettes to women. In the State of Utah, billboard and street-car advertising of cigarettes has been made a misdemeanor. In Mississippi, Dr. W. F. Bond, state superintendent of education, is calling for a nation-wide effort to combat the millions of dollars that cigarette manufacturers are spending for propaganda. In California, schools are required by law to instruct children as to the injurious effects of tobacco, and the sale of cigarettes is forbidden to any girl or boy under the age of eighteen. In practically every other state of the Union, public disapproval of cigarettes for minors is expressed by law in one form or another."—*Pennsylvania Medical Journal.*

Domestic Liver Extract

The sufferer from pernicious anemia, like the diabetic patient, must frankly face the necessity of continued attention to his treatment, probably for the rest of his life. William B. Castle and Morris A. Bowie, Boston (*Journal A. M. A.*, June 1, 1929), describe a process by which it is possible for any reasonably intelligent person to make from inexpensive beef liver an extract effective in the treatment of pernicious anemia. The expense of the process, aside from the initial cost of the utensils needed, which are found in most kitchens, is practically the cost of the liver alone. With a little experience the time involved should not be greater than one-half hour daily. The extract so produced should not exceed in amount two ordinary drinking glasses (500 c.c.) of a liquid tasting very like beef broth, and almost entirely free from the peculiar flavor of liver which offends many patients. The process is based on the first few steps of the original procedure used by Cohn and his associates in the preparation of their extracts of liver effective in the treatment of pernicious anemia. It can be carried out by the patient.

Extensive Resection of Small Intestine

In a case of gangrene of the small intestine caused by an embolus of the superior mesenteric artery, F. N. C. Jerauld, Niagara Falls, N. Y. (*Journal A. M. A.*, June 1, 1929), resected 19 feet of small bowel. A rapid entero-enterostomy was done, the small intestine being anastomosed to the cecum with a fairly large opening and with two rows of sutures. Convalescence was uneventful. One year later the patient was seen by William W. Washburn, San Francisco. Symptoms of intestinal obstruction led to a second operation. Close to the cecum were found a few old adhesions and one thick band which encircled the small bowel, about 4 cm. from its termination in the cecum. The adhesions were freed, relieving the obstruction. Since then the patient has been entirely well.

The United States Pharmacopeia

The United States Pharmacopeia is published by authority of the United States Pharmacopeial Convention. This body meets once every ten years, and its chief function is the selection of the committee

of revision of the United States Pharmacopeia. To this committee is assigned the task of issuing the revised edition of the book. The next Pharmacopeial Convention has been called for May 13, 1930, at which time the delegates appointed by the constituent bodies will meet and inaugurate the preparation of the eleventh revision of the Pharmacopeia. At the time when instruction in medical schools in subjects related to therapy and drugs was woefully deficient, and when conditions made necessary the establishment by the American Medical Association of its Council on Pharmacy and Chemistry, the Pharmacopeia promised to degenerate into a mere book of standards for drug control officers. In 1916, when the ninth revision of the Pharmacopeia made its appearance, it was pointed out that it was a book of standards for drugs but not a book of standard remedies. Largely as a result of the renewed interest in scientific drug therapy which was created by the Council on Pharmacy and Chemistry, there was so much interest taken in the following revision of the Pharmacopeia that, at the convention held in 1920, the medical members of the revision committee were in effect delegated to decide which of the drugs in the ninth revision were to be retained in the tenth and which were to be omitted as being of insufficient usefulness, and as a result the tenth revision is a book with which physicians and pharmacists may justly be satisfied. In order that the next revision may correctly reflect the advances in drug therapy, the medical and other bodies entitled to send delegates to the coming convention should give serious consideration to the appeal of the Council on Pharmacy and Chemistry that competent delegates be sent to this convention.—*Journal A. M. A.*, September 28, 1929.

American Cross Chemical Company

The American Cross Chemical Company is one of the trade names used by W. H. Paxton, of Birmingham, Alabama, in the sale of his nostrums. Other names used are Pax American Cross Chemical Co., and American Cross Bearers. W. H. Paxton is a colored man who for some years has been engaged in selling "Pax 2 New Life Savers Compound Syrup of Fruit Juices" and "Pax 3-in-1 Healing Antiseptic and Liniment." In a prosecution by the government it was brought out that the so-called New Life Saver Tonic was said to consist of a mixture of pineapple syrup, vanilla extract, extract of blackberries, glycerine, and fluid extract of juniper berries. Paxton's "Healing Antiseptic and Liniment" was said to contain glycerine, fluid extract of pokeroot, oil of lavender flowers, oil of juniper berries, oil of sassafras, and fluid extract of blackberry. Paxton claimed that his nostrum would cure cancer, gonorrhea, and many other specific diseases and ailments. The post office authorities have issued a fraud order against the American Cross Chemical Co., Inc.; Pax American Cross Chemical Co., Inc.; American Cross Bearers; W. H. Paxton, President, and Mrs. Cassie Bell Paxton, Secretary-Treasurer, thus denying the use of the mails for the furtherance of the sale of the nostrums.—*Journal A. M. A.*, September 7, 1929.

Appointment Announced

Dr. C. C. Bass, dean of the School of Medicine of Tulane University, New Orleans, recently announced the appointment of Dr. Robert A. Strong as professor of pediatrics and head of the department of pediatrics in the school. This appointment carries with it membership on the executive faculty of the school.

For several years prior to 1923 Dr. Strong was professor of clinical pediatrics at Tulane. He will assume his new position at the opening of the new term. He will continue to edit the *Digest*.

Evaluation of Cholecystography

In a series of 121 consecutive cases which came to operation, and which had previously been examined cholecystographically and reported as "normal" (thirty-six cases) or "pathologic, non-calculous" (eighty-five cases), James T. Case, Battle Creek, Mich. (*Journal A. M. A.*, January 26, 1929), states that operation revealed stones in only six cases, or less than five per cent. In a series of 138 consecutive cases in which stones were found at operation, the preoperative cholecystographic report had been "stone positive" in seventy-four, "absence of shadow" in fifty-eight, and "normal" in none; in only six cases had there been a report of "pathologic, non-calculous." Even in the last six cases, though stones were not found, there was no doubt as to the pathologic state of the vesicle. Thus, there is a reliability of better than 95 per cent in the cholecystography, both for confirming and for excluding cholelithiasis. In other words, the statement seems justified that in 95 per cent of the cases the cholelithiasis one at least of the following röntgen-ray signs should be obtainable: (1) positive shadows on direct examination (opaque stones) without need of cholecystography; (2) filling defects or holes in the

cholecystographic shadow, and (3) failure of the gallbladder to visualize ("absence of shadow") after Graham's test by the intravenous method.

Viosterol: Irradiated Ergosterol

The demonstration that many food materials can acquire physiologic potencies when the products are subjected to the direct influence of ultra-violet rays is a contribution of recent scientific investigation. The effects of the irradiate dsubstances within the body are identical with, or equivalent to, those that have been ascribed to vitamin D, the antirachitic food factor. The latter is known to induce the healing of rickets or to prevent the latter when suitable foods containing vitamin D, such as cod-liver oil, are employed in a prophylactic way. Tetany and probably other diseases may be favorably influenced in a comparable manner. Ergosterol, a sterol widely present in small amounts in edible products, was shown to be "provitamin" or substance that acquired antirachitic potency after suitable irradiation. It was inevitable that a product possessing the remarkable action of irradiated ergosterol and readily obtainable should attract attention in the fields of therapy and prophylaxis; also, the danger of quackery follows in the wake of discovery, particularly when, as in the case of irradiated ergosterol, the product possesses enormous potency. To avert the almost inevitable confusion and to exercise a wholesome restraint over the exploitation of the new product, the Council on Pharmacy and Chemistry of the American Medical Association has followed its usual custom of adopting a common name, viosterol, for irradiated ergosterol. It has recognized two preparations of this substance, namely, viosterol in oil 100 D (N. N. R.), having one hundred times the antirachitic potency of a standard cod-liver oil; and cod-liver oil with viosterol 5 D (N. N. R.), being cod-liver oil with the addition of viosterol and having five times the antirachitic potency of a standard cod-liver oil. In announcing this action, the council publishes standards of identity, dosage, and suggestions for therapeutic use. The use of products accepted for New and Non-official Remedies, according to the advices of the council, is likely to avert any undesirable consequences from the use of this potent agent.—*Journal A. M. A.*, August 31, 1929.

Denatured Vaccines

One of the basic hypotheses of vaccine therapy is the assumption that the artificial immunity produced by killed cultures, bacterial autolysates and other microbic products is necessarily specific for the living microörganisms from which the vaccines were obtained. Nevertheless, commercial exploitation almost invariably overlooks or neglects the fact that such vaccines, while demonstrably antigenic, may be so altered in specificity as to be inoperative against the living microörganisms. It has been found that bacteria treated with certain chemicals "may be changed so that new antigens are formed to which rabbits respond by the production of antibodies specific for the altered bacteria." These antibodies, which are "different from those formed for live organisms, were not demonstrated to be bactericidal for live bacteria."—*Journal A. M. A.*, August 31, 1929.

Chicago Will Not Advertise

An erroneous impression now floods the lay press to the effect that the Chicago Medical Society is about to enter into a vigorous commercial advertising campaign. This is false as false can be. Dr. Louis E. Schmidt was recently expelled from both the Chicago Medical Society and the Illinois State Medical Society for just such an infraction of the standards and tenets of recognized medical ethics.

An editorial appearing in the Bulletin of the Chicago Medical Society under date of September 21, 1929, through a possible laxity of phrasing so laid itself open to misinterpretation by the laity and subsequently the lay press that to a portion of the general public, and even to many of the profession, it has appeared that the Society is about to sponsor a commercial advertising campaign for physicians and surgeons and among the laity, rather than, as it did mean, a campaign of education of ethical medicine among physicians themselves and among the laity.

Unfortunately, this unofficial, misleading editorial was hailed by the lay press and by many publicists as the last word on the advertising question and a complete reversal of our medical standards. It has brought to the offices of the A. M. A. and elsewhere a tremendous influx of criticism that at times has bordered upon the inherently vicious. Protests have been both written, printed, and verbal.

Let it be stated now, and for all time, that advertising is against medical ethics. The ideals of the Hippocratic oath remain unchanged.

The only advertising in which ethical medicine is interested is that which teaches the general public the ideals, the progress, and the skill of ethical medicine. It must be unalterably understood that this advertising will exploit the science and practice of

medicine, and not the individual physician under any circumstances.

Never in the councils of the Chicago Medical Society has the question of commercial advertising ever come up for discussion, because every ethical physician is thoroughly aware that such exploitation would never be countenanced by the body professional even if the physician's own personal ambitions should lead him into such misguided desires.

The editorial mentioned in the Bulletin of the Chicago Medical Society, which has been subjected to such distortion in lay hands, expressed the opinion of one man, who, if the truth be told, was probably as much surprised as anybody when he discovered the misinterpretation that had been put upon his remarks by the laity.

Medical journals, written from a medical standpoint for medical men, are just as prone to misinterpretation by the uninitiated as chemical journals written for chemists would be if they were read by outsiders. The appearance of this editorial in the Bulletin of the Chicago Medical Society in no way stamps it as the official opinion of the Chicago Medical Society or any other medical society either in the state of Illinois or the United States. All over this country—in fact, all over the civilized world—but one opinion maintains as to the attitude of ethical medicine and advertising. And that opinion is voiced to eternity in the Hippocratic oath.

The whole tempest in a teapot is a warning that, under present conditions, doctors today should be very cautious as to what they print or say in public, officially or otherwise. The newspapers of the country are on the alert to pick up any statement that may lend new fire to the Schmidt controversy and reverse the right of medical societies to rule upon the paramount question of what medical ethics is and what ethics is not.—*Illinois Medical Journal.*

Propaganda for Reform

The U. S. Pharmacopeial Convention.—The Council on Pharmacy and Chemistry has issued a report calling attention to the call for the appointment of delegates to the United States Pharmacopeial Convention. The Council urges all the organizaztions which are entitled to delegates to select persons who are noted for high ideals, for breadth of vision, for sane understanding, and for sound judgment, as well as for technical knowledge, men who are fitted by temperament and training to collaborate, to help by deed and by counsel to keep the United States Pharmacopeia a work in which American medicine and American pharmacy may feel a just pride; a work that fairly reflects modern medical and pharmaceutic science; a work that is conservative of the best of the past, and progressive, constructive, sensitive to the best of the new. The Council discusses the character of the work of revision and the men required for this work. It points out that the selection of drugs to be admitted to the Pharmacopeia must be determined primarily by their therapeutic usefulness; that these are medical matters, and therefore fall within the technical province of the physicians of the revision committee; and that the definite recognition of this principle in the last revision contributed notably to its success and should be continued. The Pharmacopeia should be a working manual of the present era and not an antiquarian museum. New drugs should be admitted freely when their therapeutic usefulness appears established, and some old drugs which have fallen into neglect or disrepute should be omitted. The policies of the present revision have earned for the Pharmacopeia "the sanction of the medical community and of the public" and may safely be continued. (*Journal A. M. A.*, September 28, 1929, p. 989.)

Medical Libraries

Quite a number of state societies and a good many county societies maintain medical libraries for the accommodation of their members. Different kinds of services are given by these libraries, but, so far as can be learned, they are generally regarded as very much worth while. The most valuable for reference is the library that is made up largely of medical periodicals, because in these will always be found the most recent findings in medicine. The expense of a well-conducted library of this kind is considerable; however, such a library can be developed by a state society at less cost than by any other organization, especially if the location of the library is convenient to the place of publication of the state medical journal, so that the exchanges can be readily turned over to it. Naturally, the expense of employing a librarian must be considered.

The matter of service to the members is less complicated in county society libraries, because these are usually accessible to all of the members. A state society's library must be conducted on some plan that will give adequate service to members in all parts of the state. It would be interesting to know how this is accomplished by the libraries of other state societies, and it would also be interesting to

know just what per cent of the members take advantage of the service that is available.—*Kansas Medical Journal.*

Ethics, Again

The question of "ethics" is attracting general attention, as may be seen in a London letter dated July 13, 1929, in which, during a litigation, the suggestion was made that the physician defendant performed a series of dangerous, unnecessary operations "in order to put fees into his pocket," and in a Paris letter of July 3, 1929, one learns that the Academy of Medicine has decided to take part in the organization of an "Ethical Order of Physicians."

In this country, at the recent meeting of the A. M. A., the House of Delegates adopted a new wording of that section of the Code of Ethics referring to the subject of fee-splitting, which, to say the least, is inclusive and explicit and it is to be hoped that its letter and spirit will be followed more generally than was the older wording.

To many physicians, perhaps most, there seems to be no more reason for inserting this section than for inserting one or all of the "Ten Commandments." The mere fact that such a section is deemed necessary is a rather sad commentary upon the medical profession and leads to many conclusions, one of which is that, despite four years of collegiate premedical training, a four-year medical course and other requirements for graduation, the more desirable students do not seem to be attracted to the practice of medicine as it is being practiced.

Many medical students receive their degree with no idea as to the economic and ethical questions concerning the actual *practice* of medicine in contradistinction to the *study* of medicine.

Medical ethics should not be taken for granted, but should be instilled into the hearts and minds of students early in their course of study so that, if such ethical principles are found to be incompatible with other principles of the particular individual, a change to a more suitable calling may be made without unreasonable loss of valuable time.

We are told that ethics, morals, standards and customs change with changing conditions, circumstances and environments; that morals are but good manners and good taste, and are consequently subject to modes and fashions.

This is, of course, true: in business, in art, in literature, and in drama; but does not hold true regarding facts. That two and two is four persists despite changes in fashion, climate or government; and gravitation still gravitates despite even the aëroplane.

The necessity for ethics may be great, or they may be uncalled for. The ethics of accepting a tip need not bother a shoeblack, chauffeur, waiter or barber; commissions in business may or may not be considered from an ethical standpoint; but in the practice of medicine, which concerns life and health, ethics must be of the highest order, on a professional basis, *i.e.*, that the patient's interest is paramount, in contradistinction to a business basis in which *caveat emptor* (let the buyer beware) is the guiding principle.

The old-fashioned medical Code of Ethics is often laughed at, or even sneered at, by non-medical individuals, but the reason for perpetuation of an unmodified ethical code is that this concerns not business, nor art, literature, or drama, but concerns life and death: and the demand for its enforcement should come, not from the profession, but from those more vitally concerned, the patients.

When the merchant realizes the fact that a commission for a sale in "clucks and suits" is different from a commission for a surgical operation or medical management that may be life-saving or life-endangering, then will there be a solution to the question of "fee splitting." (F. G. C.)—*Wisconsin Medical Journal.*

Psychologist Versus Psychiatrist

During the past few years the terms "psychologist" and "psychiatrist" have become quite conspicuous in the scientific world, as well as in lay usage. To the true scientist and man of letters the words cause no confusion. However, in the minds of the laity, some writers, and some would-be psychologists, the terms are very perplexing. This is exemplified by a letter coming under the scrutiny of the writer, in which a definition of the two terms is asked. For the opportunity to see this letter and to quote the reply to it, the writer is indebted to a friend. The definition is inserted in this editorial, for it clarifies the two terms very satisfactorily:

"First, psychology is really a highly specialized branch of philosophy, and the psychologist tends to explain various types of human behavior largely through a study of mental mechanisms *per se*. His work begins and ends with this study, and he is not qualified either by training or by law to treat ab-

normal mental functioning when it exists, other than to help the individual understand his problems and suggest certain measures that might help him to a better social adjustment.

"Second, psychiatry is a highly specialized branch of medicine, and a psychatrist must first of all be a trained and legally qualified physician. As such, he approaches the study of abnormal mental functioning, not from the standpoint of mental mechanism alone but understanding that the mind and body are not separate and distinct entities. He approaches his problem as he would any other medical or surgical condition; namely, by an investigation of the entire anatomic, physiologic, clinical, neurologic, and psychologic individual.

"A psychologist can not be a psychiatrist. A psychiatrist can and should be a good psychologist." —*Pennsylvania Medical Journal.*

New and Non-Official Remedies

Ointment Ephedrine Compound.—An ointment containing ephedrine—Lilly (New and Non-Official Remedies, 1929, p. 166), 1 gm.; menthol, 0.65 gm.; camphor, 0.65 gm.; oil of thyme, 0.0375 gm.; hydrous wool fat, 5 gm.; liquid petrolatum, 24 gm.; white petrolatum, to make 100 gm. Eli Lilly & Co., Indianapolis.

Lilly's Ephedrine Jelly.—It is composed of ephedrine sulphate—Lilly (N. N. R., 1929, p. 169), 1 gm.; glycerine, 15 gm.; tragacanth, 1.5 gm.; eucalyptol, 0.1 gm.; oil of wintergreen, 0.005 gm.; oil of dwarf pine needles, 0.005 gm.; water to make 100 gm. Eli Lilly & Co., Indianapolis.

Vioform-Ciba.—Iodochlorhydroxyquinolin.—A substitution compound of anachlor-ortho-hydroxyquinoline resulting from the introduction of one atom of iodine. Vioform-Ciba is used as an odorless substitute for iodoform. It is used as a dusting powder for application to wounds, ulcers, burns, exudative skin eruptions, etc. Ciba Co., Inc., New York.

I-X Barium Meal.—A mixture of barium sulphate U. S. P., 85 per cent; native aluminum silicate, 10 per cent; malted milk (malt extract-milk powder), 5 per cent; with a trace of saccharin. The preparation is used for röntgen-ray examinations, administered orally or by rectum. Dick X-Ray Co., St. Louis.

Mead's Powdered Lactic Acid Milk, Non-Curdling No. 1, with Dextri-Maltose.—A modified milk product prepared by adding lactic acid, U. S. P., and a maltose-dextrin preparation to whole milk, heating, drying, and powdering. It is proposed for use in the feeding of infants when it is desired to prescribe an acidulated milk with a certain amount of added carbohydrate. Mead Johnson & Co., Evansville, Ind. (*Jour. A. M. A.*, September 7, 1929, p. 769.)

WOMAN'S AUXILIARY

Monongalia County

An interesting luncheon in honor of the Woman's Auxiliary to the Monongalia County Medical Society was held at the home of Mrs. Brinley John in Morgantown, recently. Guests of honor were Mrs. Charles P. Welton and Mrs. E. P. Smith, president and secretary, respectively, of the Marion County Auxiliary at Fairmont, and Miss Catherine French, of Columbus, Ohio, the house guest of Dr. and Mrs. Wilbur H. McGaw, of Morgantown.

During the business session later in the afternoon, Mrs. H. C. Powell, the president, announced that the local auxiliary was the first in the state to have 100 per cent membership. Wives of all doctors in this county are affiliated with the organization. New members received were Mrs. E. F. Heiskell, Mrs. Charles M. Bray, Mrs. C. H. Maxwell, Mrs. B. Clifford John, Mrs. William L. Madeira, and Mrs. Samuel W. Cottle.

The program included a talk by Miss Ethel Craig, who gave the results of a survey of defective children in the county schools, and a paper on the life of James Todd, by Mrs. J. R. Hughart.

Members who were guests for the luncheon and meeting were Mrs. Cyrus F. Boyers, Mrs. M. H. Brown, Mrs. R. H. Edmondson, Mrs. L. W. Cobun, Mrs. Page A. Gibbons, Mrs. J. R. Hughart, Mrs. W. H. Howell, Mrs. Carl Johnson, Mrs. William C. Kelley, Mrs. P. D. Arbogast, Mrs. C. Royall Kessel, Mrs. H. V. King, Miss Repta McBee, Mrs. D. C. McDonald, Mrs. Wilbur H. McGaw, Mrs. George W. Phillips, Mrs. Donald Post, Mrs. Harvey C. Powell, Mrs. Dorsey Brannan, Mrs. C. C. Romine, Mrs. William B. Scherr, Mrs. A. E. Smith, Mrs. Benjamin M. Stout, Mrs. Frank S. Talbott, Mrs. C. B. Wylie, Mrs. R. Coale Price, Mrs. B. Clifford John, Mrs. William L. Madeira, Mrs. W. F. Heiskell, Mrs. Samuel Morris, and Mrs. C. H. Maxwell.

INDEX TO VOLUME XXV

THE WEST VIRGINIA MEDICAL JOURNAL

A

Abdominal Conditions, Some Difficulties Encountered in the Diagnosis of—Julius Friedenwald, M.D., and Theodore H. Morrison, M.D. 533
Abdominal Pain, Acute—W. H. Wallingford, M.D. 603
Abdominal Surgery, The Importance of Complete Peritonization in—John E. Cannaday, M.D. 653
Acidosis—H. A. Walkup, M.D. 210
Acute Abdomen, A Plea for a Closer Cooperation Between General Practitioner and Surgeon in the—E. T. W. Hall, M.D. 660
Anesthesia, Spinal—J. A. Guthrie, M.D. 134
Angina, Vincent's—Sobisca S. Hall, M.D., and Harry V. Thomas, M.D. 612
Angina, Vincent's—L. J. Parmesano, D.D.S. 289
Armbrecht, E. L.—Chronic Nephritis in Young Adults 529
Aural Disease, The Prophylactic Treatment of—E. R. McIntosh, M.D. 400

B

Baber, James H.—A Brief Review of One Hundred Cases Presented for Gastrointestinal Study 205
Backache, Some of the Causes of—W. E. Dodd, M.D. 723
Banks, Bankhead—Blood Transfusion 390
Barber, T. M.—Some Newer Aspects of Rickets 199
Baxter, George Edwin—Some Common Problems in the Management of the Sick Infant 193
Bennett, Dr. Jessee, and Dr. A. L. Knight—Joseph Lyon Miller, M.D. 409
Biliary Tract Infection—John B. Deaver, M.D. 577
Blankenhorn, M. A.—Oxygen Therapy 597
Blankinship, Ray C.—Modern Methods of Diagnosis in Gastrointestinal Disorders 705
Blood-Pressure Changes During Heart Failure—Leslie T. Gager, M.D. 214
Blood-Stream Infection—Sydney R. Miller, M.D. 529
Blood Transfusion—Bankhead Banks, M.D. 390
Borman, Milton C.—Cardiac Arrhythmias 385
Borman, Milton C.—Diseases of the Heart Muscle 267
Borman, Milton C.—Diseases of the Heart Valves 339
Borman, Milton C.—The Necessity of the Early Diagnosis of Cardiac Disease 208
Borman, Milton C.—The Radial Pulse 458
Brannan, Dorsey—The Early Recognition of Some Common Urologic Conditions 545
Buford, Robert King—A Clinical and Pathological Study of Goiter 343
Buford, Robert King—The Surgical Management of Goiter 454
Bunts, F. E.—Clinical Progress in Cancer of the Breast 12
Burns, Pregnancy Complicated by—Thos. W. Nale 153

C

Calcium Chloride Intravenously as a Treatment for Pulmonary Tuberculosis—C. H. Hall, M.D. 406
Cancer of the Breast, Clinical Progress in—F. E. Bunts, M.D. 12
Cancer of the Liver, with Differential Diagnosis—E. S. Dupuy, M.D. 360
Cannaday, John E.—The Importance of Complete Peritonization in Abdominal Surgery 653
Carcinoma of the Rectum—Fred W. Rankin, M.D., and Robert DuVal Jones, M.D. 5
Cardiac Arrhythmias—Milton C. Borman, M.S., M.D. 385
Cardiac Disease, The Necessity for the Early Diagnosis of—M. C. Borman, M.D. 208
Condry, R. J.—Generalized Lues 107
Condry, R. J.—Treatment of Late Toxemias of Pregnancy 474
Condry, R. J.—When Is Gonorrhea Cured? 91

D

Deaver, John B.—Biliary Tract Infection 577
Denman, Byford H.—Spinal Anesthesia 134
Dental Tissues, Focal Infection in the—J. H. Mayo, D.D.S. 730
Diarrheas in Infancy, Various—G. G. Hodges, M.D. 148
Dodd, W. E.—Some of the Causes of Backache 723
Dupuy, E. S.—Cancer of the Liver, with Differential Diagnosis 360

E

Economics—H. V. King, M.D. 552
Emerson, Haven—Practice of Preventive Medicine 584
Endocervicitis, The Treatment of—B. C. John, M.D. 657
Evans, G. F.—Tuberculosis in Children 357
Eye Injuries—G. P. Morison, M.D. 465

F

Forman, Jonathan—The Renal Factor in the Diagnostic Studies of the Gastrointestinal Tract 401
Fractures, Nerve and Muscle Injury in Relation to—Albert G. Rutherford, M.D., F.A.C.S. 645
Friedenwald, Julius—Some Difficulties Encountered in the Diagnosis of Abdominal Conditions 533

G

Gager, Leslie T.—Blood-Pressure Changes During Heart Failure 214
Gallbladder and Some of Its Common Diseases, The—Carl C. Romine, M.D. 144
Gangrenous Balanitis—A. S. Lloyd, M.D. 89
Gastrointestinal Disorders, Modern Methods of Diagnosis of—Ray C. Blankinship, M.D., F.A.C.P. 705
Gastrointestinal Study, A Brief Review of One Hundred Cases Presented for—James H. Baber, M.D. 205
Gastrointestinal Tract, The Renal Factor in Diagnostic Studies of the—Jonathan Forman, A.B., M.D. 401

Gayle, R. Finley, Jr.—The Most Common Neurological Conditions Encountered in General Practice 275
Gill, R. D.—Benign Prostatic Hypertrophy 84
Gillis, R. A.—Preserving the Pelvic Floor During Labor 336
Ginter, A Clinical and Pathological Study of—Robert King Buford, Ph.G., M.D., F.A.C.S. 343
Goiterous Conditions, Medical Management of—H. L. Robertson, M.D. 351
Goiter, Evolution of the Present Knowledge of the Treatment of—Stuart McGuire, M.D. 138
Goiter, Science and Safety of the Prevention of—O. P. Kimball, A.M., M.D. 65
Goiter, The Surgical Management of—Robert King Buford, Ph.G., M.D., F.A.C.S. 454
Goiter, Toxic, Some Points in the Diagnosis and Treatment of—A. A. Milburn, M.D. 20
Golden, B. I.—Intestinal Obstruction 155
Gonococcal Infection in the Female, Diagnosis and Treatment of—Philip Johnson, M.D. 283
Gonorrhea, When Is, Cured?—R. J. Condry, M.D. 91
Gout, The Diagnosis of Acute and Chronic—Albert H. Hoge, M.D., F.A.C.P. 461
Grigg, A. H.—Hemolytic Jaundice 737
Guthrie, J. A.—Spinal Anesthesia 134
Guthrie, J. K.—When to Operate 150

H

Hall, C. H.—Calcium Chloride Intravenously as a Treatment for Pulmonary Tuberculosis 406
Hall, C. H.—Some Medical Problems 595
Hall, E. T. W.—A Plea for a Closer Cooperation Between General Practitioner and Surgeon in the Acute Abdomen 660
Hall, Harry M.—President's Annual Address 321
Hall, Harry M.—The Relation of the Hospital Staff to the Directorate and Superintendent 99
Hall, Harry M.—The School of Medicine in the Development of the State of West Virginia 24
Hall, Sobisca S., and Harry V. Thomas—Vincent's Angina 612
Hamann, C. A.—Sarcoma of the Breast 413
Head Traumas, Acute—Paul R. Sieber, M.D., F.A.C.S. 259
Health Officer and the Practicing Physician—C. A. Ray, M.D. 285
Heart Muscle, Diseases of the—Milton C. Borman, M. S., M. D. 267
Heart Valves, Diseases of the—Milton C. Borman, M.S., M.D. 339
Henson, E. Bennette—Treatment of Snake-Bite 556
Hodges, G. G.—Various Diarrheas in Infancy 148
Hoge, Albert H.—The Diagnosis of Acute and Chronic Gout 461
Hoge, Albert H.—Hypothyroidism: Diagnosis and Treatment 87
Holland, Eugene Amos—Polioencephalitis 559
Howell, Fleming—Relation of Musical Sounds to Physical Diagnosis 664
Hospital Staff, The Relation of the, to the Directorate and Superintendent—Harry M. Hall, M.D. 99
Hupp, Frank LeMoyne—The Human Factor in Caring for the Sick 94
Human Factor, in Caring for the Sick, The—Frank LeMoyne Hupp, Sc.D., M.D. 94
Hypothyroidism: Diagnosis and Treatment—Albert H. Hoge, M.D., F.A.C.P. 87

I

Infant, Some Common Problems in the Management of the Sick—George Edwin Baxter, M.D. 193
Infant, The Newborn—Ralph M. Tyson, M.D. 323
Intestinal Obstruction—B. I. Golden, M.D. 155

J

Jaundice, Hemolytic—A. H. Grigg, M.D. 737
John, B. C.—The Treatment of Endocervicitis 657
Johnson, Philip—Diagnosis and Treatment of Gonococcal Infection in the Female 281
Jones, E. Lloyd—The Specialist and the Profession 141
Jones, Robert DuVal, and Fred W. Rankin—Carcinoma of the Rectum 5

K

Kimball, O. P.—Science and Safety of the Prevention of Goiter 65
King, H. V.—Economics 552

L

Liggett, B. L.—Spina Bifida 614
Lloyd, A. S.—Gangrenous Balanitis 89
Looper, Edward A.—Infection of the Nasal Accessory Sinuses 710
Lues, Generalized—R. J. Condry, M.D. 107
Lymphosarcoma and Hodgkin's Disease—Curtis F. Burnam, M.D. 395
Lyon, George M.—The Early Diagnosis of Acute Poliomyelitis 92

M

MacGregor, D. A.—The Diagnosis of Tumors of the Spinal Cord 513
MacGregor, D. A.—Subcortical Spongioblastoma Multiforme 733
MacKenzie, Alex. R.—The Use and Abuse of Rœntgen Rays in Inflammatory Conditions 17
Major, Ralph H.—Chronic Nephrosis: Is It a Clinical Entity? 449
Maxwell, C. H.—Preservation of the Pelvic Floor During Labor, Without Hospital or Nurse 464
Maxwell, G. R.—Puerperal Eclampsia 539
Mayo, J. H.—Focal Infection in the Dental Tissues 730
McGuire, Stuart—Evolution of the Present Knowledge of the Treatment of Goiter 138
McIntosh, E. R.—Muscæ Volitantes, Myodesopsia 468
McIntosh, E. R.—The Prophylactic Treatment of Aural Disease 400
Measles Paraplegia, Prognosis of—Harold C. Miller, M.D. 16
Medical Problems, Some—C. H. Hall, M.D. 595
Milburn, A. A.—Some Points in the Diagnosis and Treatment of Toxic Goiter 20
Miller, Harold C.—Prognosis of Measles Paraplegia 16
Miller, Joseph Lyon—Dr. Jessee Bennett and Dr. A. L. Knight 409
Miller, Sydney R.—Blood-Stream Infections 523
Morison, G. P.—Eye Injuries 466
Morrison, Theodore H.—Some Difficulties Encountered in the Diagnosis of Abdominal Conditions 533
Muscæ Volitantes, Myodesopsia—E. R. McIntosh, M.D. 468
Musical Sounds, Relation of, to Physical Diagnosis—Fleming Howell, M.D. 664
Mystery of the Vanishing Lady, The—Alexander Woollcott 668

N

Nale, Thomas W.—Hemolytic Anemia of Pregnancy 557
Nale, Thomas W.—Pregnancy Complicated by Burns 153
Nasal Accessory Sinuses, Infection of—Edward A. Looper, M.D. 710
Nephritis, Chronic, in Young Adults—E. L. Armbrecht, M.D. 529
Nephrosis, Chronic: Is It a Clinical Entity?—Ralph H. Major, M.D. 449
Neurological Conditions, The Most Common, Encountered in General Practice—R. Finley Gale, Jr., M.D. 275
Neurosis, Sphenopalatine Ganglion—Matthew F. C. Zubak, M.D. 30

O

Obstetrical Emergencies—Edward Speidel, M.D. 201
Operate, When to—J. K. Guthrie, M.D. 150
Osteomyelitis, Acute—C. W. Stallard, M.D. 9
Ovarian Cyst on Twisted Pedicle—C. B. Pride, M.D. 736
Oxygen Therapy—M. A. Blankenhorn, M.D. 597

P

Parmesano, L. J.—Vincent's Angina 289
Pelvic Floor, Preserving the, During Labor—R. A. Gillis, M.D. 336
Pelvic Floor, Preservation of the, During Labor, Without Hospital or Nurse—C. H. Maxwell, M.D. 464
Peptic Ulcer, Observations on the Etiology and Treatment of—Walter D. Simmons, M.D. 14
Polioencephalitis—Eugene Amos Holland, M.D. 559
Poliomyelitis, Acute, The Early Diagnosis of—Geo. M. Lyon, B.S., M.D., F.A.C.P. 92
Porter, William B.—Rheumatic Fever 79
Pregnancy Complicated by Burns—Thomas W. Nale, M.D. 153
Pregnancy, Hemolytic Anemia of—Thomas W. Nale, M.D. 557
Pregnancy, Treatment of Late Toxemias of—R. J. Condry, M.D. 474
Prenatal Care—W. Scott Smith, M.D. 608
President's Annual Address—Harry M. Hall, M.D., F.A.C.P. 321
Preventive Medicine, Private Practice of—Haven Emerson, M.D. 584
Pride, C. B.—Ovarian Cyst on Twisted Pedicle 736
Pride, C. B.—Perforated Gastric and Duodenal Ulcer 283
Pride, C. B.—Pyometra 417
Prostatic Hypertrophy, Benign—R. H. Gill, M.D. 84
Puerperal Eclampsia—G. R. Maxwell, M.D. 539
Puerperal Septicemia, Bacteremia or Blood-Stream Infection—T. E. Vass, M.D. 354
Pulmonary Atelectasis and Spontaneous Pneumothorax—Wm. M. Sheppe, M.D. 469
Pulse, the Radial—Milton C. Borman, M.D. 458
Pyometra—C. B. Pride, M.D. 417

Q-R

Rankin, Fred W., and Robert DuVal Jones—Carcinoma of the Rectum 5
Rathbun, Walter L.—Role of the Public School in the Control of Tuberculosis 727
Ray, C. A.—The Health Officer and the Practicing Physician 285
Rehfuss, Martin E.—The Stomach and the General Practitioner 1
Relation of the Hospital Staff to the Directorate and Superintendent—Harry M. Hall, M.D. 99
Rheumatic Fever—William B. Porter, M.D. 79
Rickets, Some Newer Aspects of—T. M. Barber, M.D. 199
Robertson, H. L.—Medical Management of Goiterous Conditions 351
Romine, Carl C.—The Gallbladder and Some of Its Common Diseases 144
Rontgen Rays in Inflammatory Conditions, The Use and Abuse of—Alex. R. MacKenzie, M.D. 17
Rutherford, Albert G.—Nerve and Muscle Injury in Relation to Fractures 645

S

Sarcoma of the Breast—C. A. Hamann, M.D. 413
Septicemias, Blood Transfusion in the—C. L. Woodbridge, M.D. 709
School of Medicine in the Development of the State of West Virginia, The—Harry M. Hall, M.D. 24
Sieber, Paul R.—Acute Head Traumas 250
Sheppe, Wm. M.—Pulmonary Atelectasis and Spontaneous Pneumothorax 459
Sherman, William O'Neill—The General Field of Traumatic Surgery 641
Simmons, Walter D.—Observations on the Etiology and Treatment of Peptic Ulcer 17
Sinusitis, Chronic Frontal, Advantages in the Technique of the Modified Lothrop Operation with the Killian Procedure for the Care of Chronic Frontal Sinusitis—Samuel Ruff Skillern, Jr., M.D. 714
Skillern, Samuel Ruff, Jr.—Advantages in the Technique of the Modified Lothrop Operation with the Killian Procedure for the Care of Chronic Frontal Sinusitis 714
Smith, W. Scott—Prenatal Care 608
Snake-Bite, Treatment of—E. Bennette Henson, M.D. 556
Sowers, F. F.—Modern Conception of the Diagnosis and Treatment of Early Syphilis 217
Specialist and the Profession, The—E. Lloyd Jones, M.D. 141
Speidel, Edward—Obstetrical Emergencies 201
Spina Bifida—B. L. Liggett, M.D. 614
Stallard, C. W.—Acute Osteomyelitis 9
Stomach and the General Practitioner, The—Martin E. Rehfuss, M.D. 1
Subcortical Spongioblastoma Multiforme—D. A. MacGregor, M.D. 733
Syphilis, Early, Modern Conception of the Diagnosis and Treatment of—F. F. Sowers, M.D. 217
Syphilis, The Treatment of—Carroll S. Wright, M.D. 129

T

Thomas, Harry V., and Sobisca S. Hall—Vincent's Angina 612
Toulson, W. Houston—Diagnosis of Upper Urinary Tract Lesions 659
Traumatic Surgery, The General Field of—William O'Neill Sherman, M.D. 641
Tuberculosis in Children—G. F. Evans, M.D. 357
Tuberculosis, The Role of the Public School in the Control of—Walter L. Rathbun, M.D. 727
Tumors of the Spinal Cord, The Diagnosis of—D. A. MacGregor, M.D. ..... 51[illegible]
Tyson, Ralph M.—The Newborn Infant 328

U

Ulcer, Perforated Gastric and Duodenal—C. B. Pride, M.D. 283
Urinary Tract Lesions, Diagnosis of Upper—W. Houston Toulson, M.D. 659
Urologic Conditions, The Early Recognition of Some Common—Dorsey Brannan, M.D. 545

V

Vass, T. E.—Puerperal Septicemia, Bacteremia or Blood-Stream Infection 354
Vincent's Angina—Sobisca S. Hall, M.D., and Harry V. Thomas, M.D. 612
Vincent's Angina—L. J. Parmesano, D.D.S. 289

W

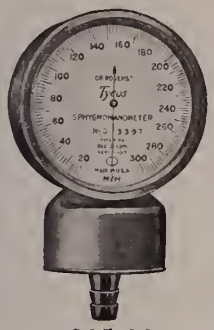
Walkup, H. A.—Acidosis 210
Wallingford, W. H.—Acute Abdominal Pain 603
When to Operate—J. K. Guthrie, M.D. 150
Woodbridge, C. L.—Blood Transfusion in the Septicemias 709
Woollcott, Alexander—The Mystery of the Vanishing Lady 668
Wright, Carroll S.—The Treatment of Syphilis 129

X-Y-Z

Zubak, Matthew F. C.—Sphenopalatine Ganglion Neurosis 30

Sphygmomanometer

(TYCOS)



Self - verifying, easy reading, portable. Can be used anywhere, in any position. The principle of the aneroid Blood Pressure apparatus makes possible the small bulk and great precision of this instrument.

$25.00

Complete with bulb and sleeve in case

Elastic Hosiery

Stockings - Anklets
Knee Caps - Leggings

Write for price list and measuring blanks

Powers & Anderson, Inc.

RICHMOND, VA.

Surgical Instruments, Hospital Supplies, Etc.

THE TULANE UNIVERSITY
OF LOUISIANA

GRADUATE SCHOOL OF MEDICINE

Approved by the Council on Medical Education of the A. M. A.

Post-graduate instruction offered in all branches of medicine. Courses leading to a higher degree have also been instituted.

A bulletin furnishing detailed information may be obtained upon application to the

DEAN
GRADUATE SCHOOL OF MEDICINE
1551 Canal Street New Orleans, La.

TETANUS ANTITOXIN

Lederle

(Refined and Concentrated)

Dosage recommended for the complete antitoxin treatment of tetanus.

First Day
5,000 to 10,000 units intraspinally and 10,000 units intravenously.

Second Day
5,000 to 10,000 units intraspinally.

Third Day
5,000 units intraspinally.

Fourth Day
5,000 to 10,000 subcutaneously.

LEDERLE ANTITOXIN LABORATORIES
NEW YORK

The Stewart Home Training School

For the Care and Training of

MENTALLY DEFECTIVE CHILDREN

Expert training, mental development and care by specially trained teachers, nurses and physician who has devoted his life to the study and treatment of cases of arrested mental development.

Delightfully located in the beautiful blue grass region of Kentucky. Five hundred acres of lawn and woodland for pleasure grounds. Seven elegantly appointed buildings, electrically lighted and steam heated. Highly endorsed by prominent physicians. Write for descriptive catalogue. Address

Dr. John P. Stewart, Box E, Frankfort, Ky.

We Make Any Kind of Orthopedic Appliances Described by Physicians

My Daddy's Leg.
It's a "UNIVERSAL."

Artificial Limbs Our Specialty

UNIVERSAL ARTIFICIAL LIMB & SUPPLY CO., Inc.

619 F St., N. W. **Washington, D. C.**

J. E. HANGER, INC.

Established 1861

Invites Inspection of Latest Improved Models of

ARTIFICIAL ARMS *and* LEGS

Demonstration Given by Representatives Wearing Limbs

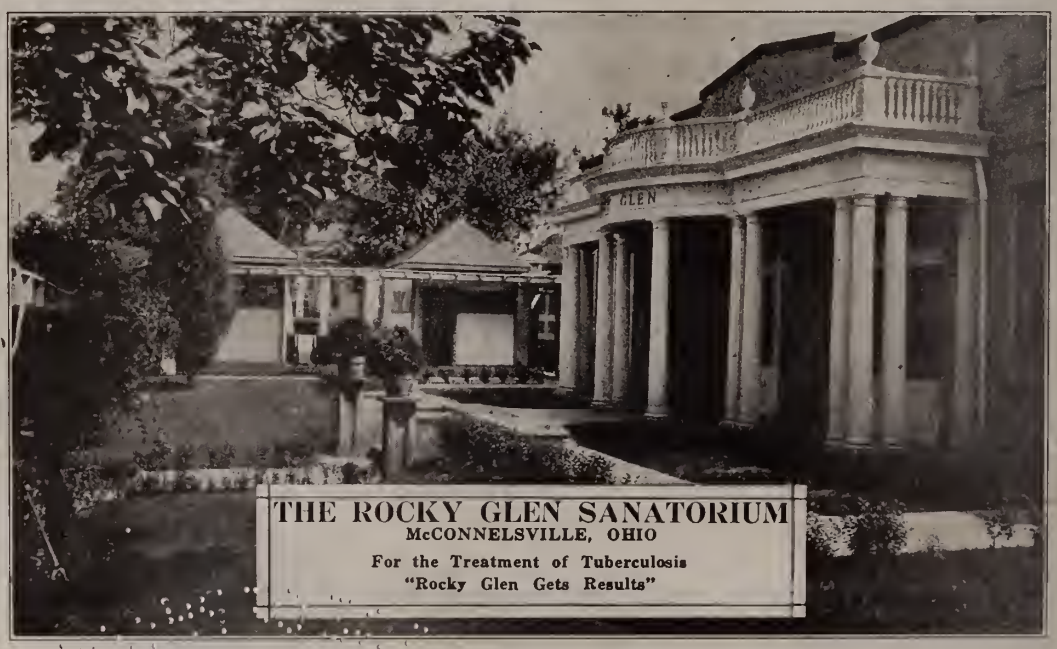
Lightest and most durable limbs manufactured. Expert fittings and service available through branch factories and agents in principal cities of America and Europe.

A perfect fit, satisfactory service, high grade workmanship and material GUARANTEED.

J. E. HANGER, INC.

1009 Bluefield Ave. Bluefield, W. Va.

Main Offices: Washington, D. C.



Established 1911 *"In the Picturesque Highlands of Ohio"*

D. G. RALSTON, M. D., *Resident Medical Director* H. A. PHILLIPS, *Superintendent*

LOUIS MARK, M. D. *Medical Director*, 247 E. State Street, Columbus, Ohio.

MUTUAL PTG. CO., CHARLESTON, W. VA.

LIBRARY OF THE
COLLEGE OF PHYSICIANS
OF PHILADELPHIA

This Book is due on the last date stamped below. **No further preliminary notice will be sent.** Requests for renewals must be made on or before the date of expiration.

DUE	RETURNED
NOV 10 1967	

A fine of twenty-five cents will be charged for each week or fraction of a week the book is retained without the Library's authorization.